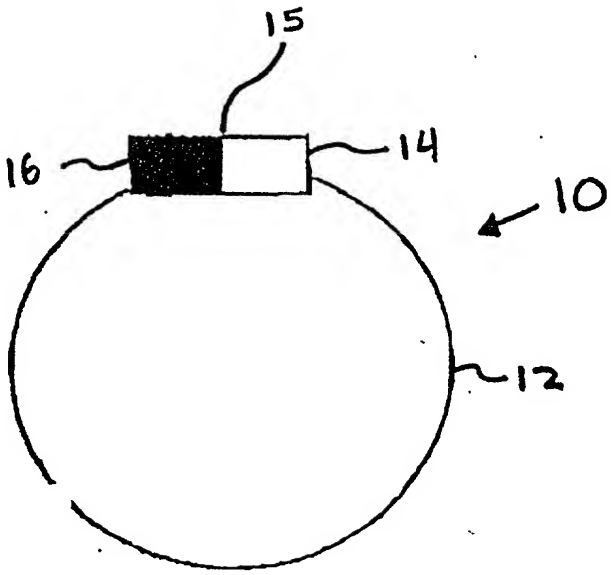


FIG. 1A

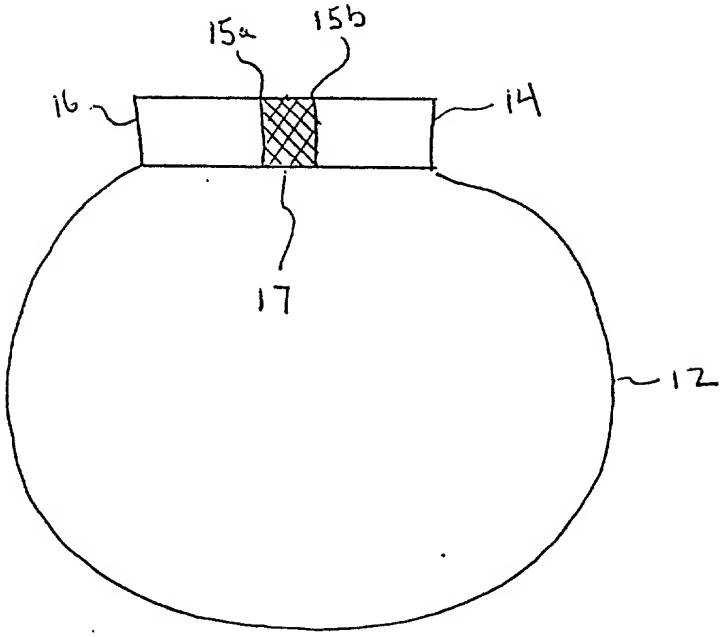
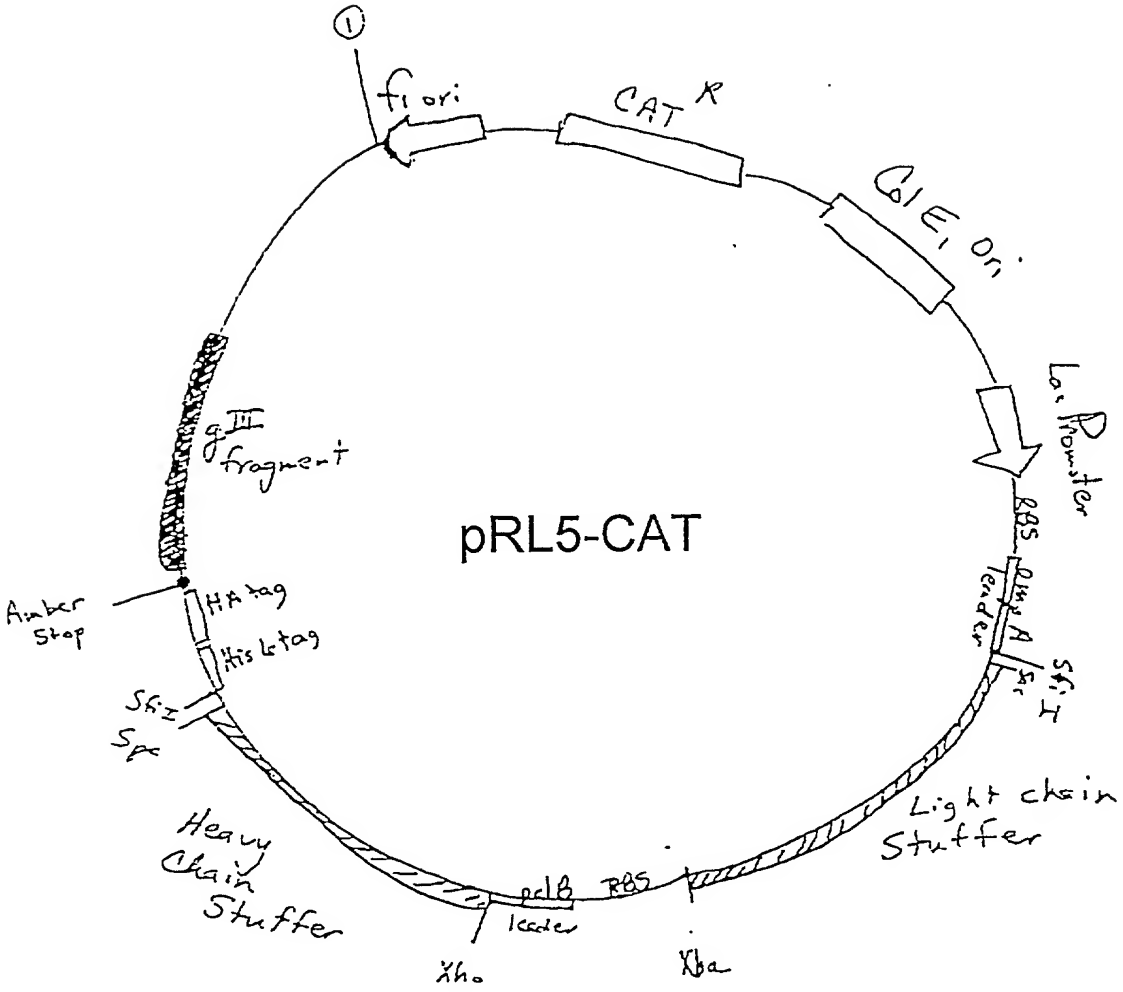


FIG. 1B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f1 ori
CAT R
ColE1 ori
Lac Promoter
RBS
alkA leader
Sfi I
Light chain Stuffer
pelB leader
RBS
Xba
Xho
Heavy Chain Stuffer
Sfi I
His 6 tag
HA tag
Amber Stop
gIII fragment

FIG. 2

PRL5-CAT

5'GGGAAATTGTAAGCGTTAATATTTTGTTAAAATTCGCGTTAAATTTTTGTTA
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CAAAAGAATAGACCGAGATAGGGTTGAGTGTTGTTCCAGTTTGGAACAAGAG
TCCACTATTAAAGAACGTGGACTCCAACGTCAAAGGGCGAAAAACCGTCTAT
CAGGGCGATGGCCCACTACGTGAACCATCACCCTAATCAAGTTTTTTGGGGTC
GAGGTGCCGTAAAGCACTAAATCGGAACCCTAAAGGGAGCCCCCGATTTAGA
GCTTGACGGGGAAAGCCGGCGAACGTGGCGAGAAAGGAAGGGAAGAAAGC
GAAAGGAGCGGGCGCTAGGGCGCTGGCAAGTGTAGCGGTCACGCTGCGCGT
AACCACCACACCCGCCGCGCTTAATGCGCCGCTACAGGGCGCGTCAGGTGGC
ACTTTTCGGGGAAATGTGCGCGGAACCCCTATTTGTTTATTTTTCTAAATACA
TTCAAATATGTATCCGCTCATGAGACAATAACCCTGATAAATGCTTCAATAAT
ATTGAAAAAGGAAGAGTATGAGTATTCAACATTTCCGTGTCGCCCTTATTCCC
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ATAATGAAATAAGATCACTACCGGGCGTATTTTTTGAGTTGTCGAGATTTTCA
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GATATATCCCAATGGCATCGTAAAGAACATTTTGAGGCATTTCAGTCAGTTGC
TCAATGTACCTATAACCAGACCGTTCAGCTGGATATTACGGCCTTTTTAAAGA
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ATCCCTTAACGTGAGTTTTCGTTCCACTGAGCGTCAGACCCCGTAGAAAAGAT
CAAAGGATCTTCTTGAGATCCTTTTTTTCTGCGCGTAATCTGCTGCTTGCAAA
CAAAAAAACCACCGCTACCAGCGGTGGTTTGTTTGCCGGATCAAGAGCTACC
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GCCTACATACCTCGCTCTGCTAATCCTGTTACCAGTGGCTGCTGCCAGTGGCG

FIG. 3A

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ACGACCTACACCGAACTGAGATACCTACAGCGTGAGCTATGAGAAAGCGCCA
CGCTTCCCGAAGGGAGAAAGGCGGACAGGTATCCGGTAAGCGGCAGGGTCG
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ATAGTCCTGTCGGGTTTCGCCACCTCTGACTTGAGCGTCGATTTTTGTGATGC
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GCCATCTGATGAGCAGTTGAAATCTGGAACTGCCTCTGTTGTGTGCCTGCTGA
ATAACTTCTATCCCAGAGAGGCCAAAGTACAGTGGAAGGTGGATAACGCCCT
CCAATCGGGTAACTCCCAGGAGAGTGTCACAGAGCAGGACAGCAAGGACAG
CACCTACAGCCTCAGCAGCACCCTGACGCTGAGCAAAGCAGACTACGAGAAA
CACAAAGTATATGCCTGCGAAGTCACCCATCAGGGCCTGAGCTTGCCCGTCA
CAAAGAGCTTCAACAGGGGAGAGTGTTAGTTCTAGATAATTAATTAGGAGGA
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CTGCACCAGGCTCCCACGGCTCGTGGTGCGGTGCGCTTCTGGTGTTCGCTGCC
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TCCGGCGCTCCGCGATATCACCGTGTCATCCACATCAATGAAGTAGTGCTCCT
AGACGCCCCCGTGGGGCTGGTGGCGCGGTTGGCTGACGAGAGCGGCCACGTA
GTGTTGCGCTGGCTCCCGCCGCCTGAGACACCCATGACGTCTCACATCCGCTA
CGAGGTGGACGTCTCGGCCGGCAACGGCGCAGGGAGCGTACAGAGGGTGGA

FIG. 3B

GATCCTGGAGGGCCGCACCGAGTGTGTGCTGAGCAACCTGCGGGGCCGGACG
CGCTACACCTTCGCCGTCCGCGCGCGTATGGCTGAGCCGAGCTTCGGCGGCTT
CTGGAGCGCCTGGTCGGAGCCTGTGTCGCTGCTGACGCCTAGCGACCTGGAC
CCCCTCATCCTGACGCTCTCCCTCATCCTCGTGGTCATCCTGGTGCTGCTGAC
CGTGCTCGCGCTGCTCTCCCACCGCCGGGCTCTGAAGCAGAAGATCTGGCCT
GGCATCCCGAGCCCAGAGAGCGAGTTTGAAGGCCTCTTCACCACCCACAAGG
GTAACTTCCAGCTGTGGCTGTACCAGAATGATGGCTGCCTGTGGTGGAGCCC
CTGCACCCCCTTCACGGAGGACCCACCTGCTTCCCTGGAAGTCCTCTCAGAGC
GCTGCTGGGGGACGATGCAGGCAGTGGAGCCGGGGACAGATGATGAGGGCC
CATCGGTCTTCCCCCTGGCACCCTCCTCCAAGAGCACCTCTGGGGGCACAGC
GGCCCTGGGCTGCCTGGTCAAGGACTACTTCCCCGAACCGGTGACGGTGTCG
TGGAACTCAGGCGCCCTGACCAGCGGCGTGCACACCTTCCCGGCTGTCCTAC
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CTTGGGCACCCAGACCTACATCTGCAACGTGAATCACAAGCCCAGCAACACC
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GCCGGCCAGCACCATCACCATCACCATGGCGCATACCCGTACGACGTTCCGG
ACTACGCTTCTTAGGAGGGTGGTGGCTCTGAGGGTGGCGGTTCTGAGGGTGG
CGGCTCTGAGGGAGGCGGTTCCGGTGGTGGCTCTGGTTCCGGTGATTTTGATT
ATGAAAAGATGGCAAACGCTAATAAGGGGGCTATGACCGAAAATGCCGATG
AAAACGCGCTACAGTCTGACGCTAAAGGCAAACTTGATTCTGTCGCTACTGA
TTACGGTGCTGCTATCGATGGTTTCATTGGTGACGTTTCCGGCCTTGCTAATG
GTAATGGTGCTACTGGTGATTTTGCTGGCTCTAATTCCCAAATGGCTCAAGTC
GGTGACGGTGATAATTCACCTTTAATGAATAATTTCCGTCAATATTTACCTTC
CCTCCCTCAATCGGTTGAATGTCGCCCTTTTGTCTTTAGCGCTGGTAAACCAT
ATGAATTTTCTATTGATTGTGACAAAATAAACTTATTCCGTGGTGTCTTTGCG
TTTCTTTTATATGTTGCCACCTTTATGTATGTATTTTCTACGTTTGCTAACATA
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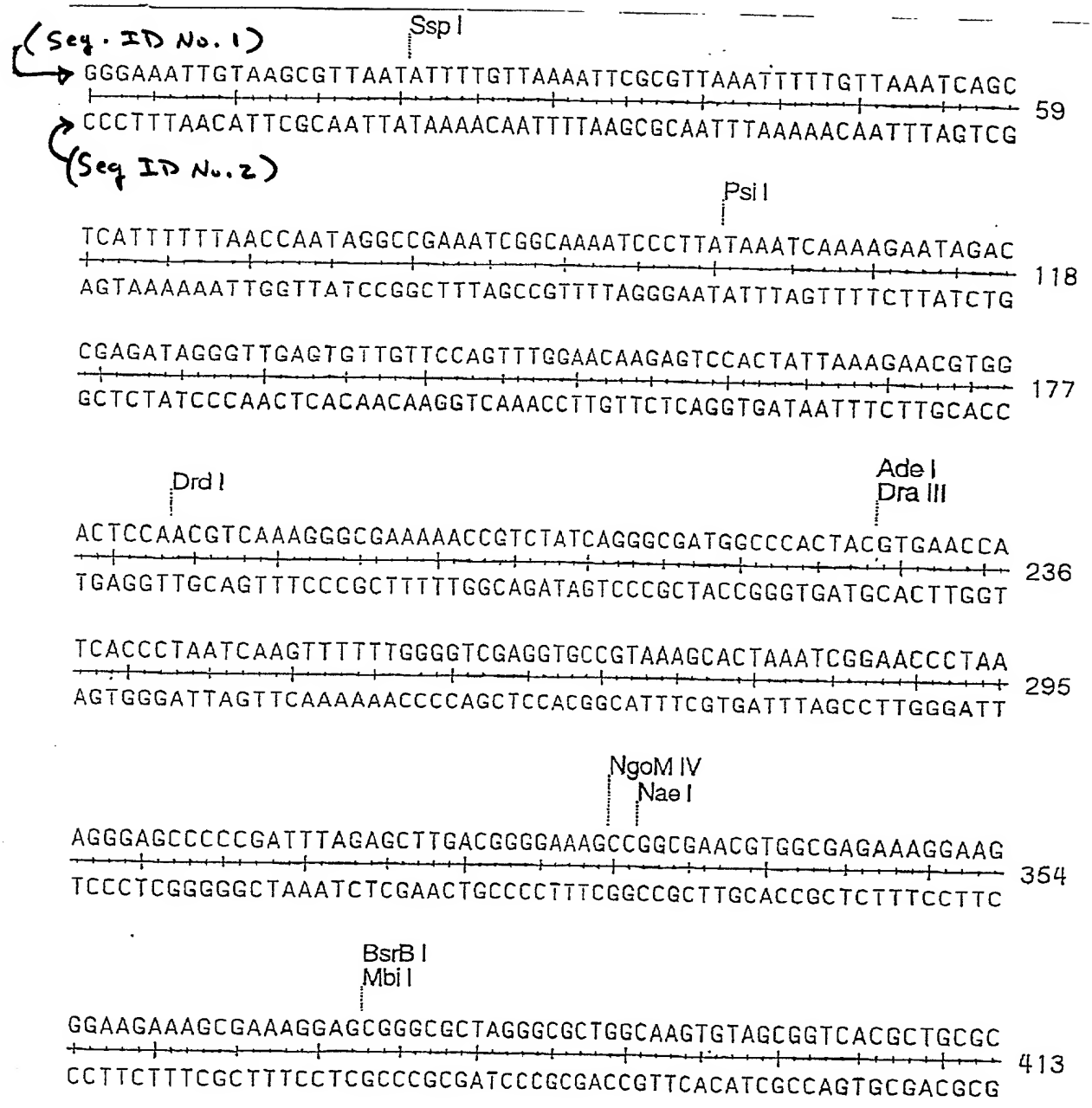
T 3’

FIG. 3C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59
(Seq ID No. 2)
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118
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GCTCTATCCCAACTCACAACAAGGTCAAACCTTGTTCTCAGGTGATAATTTCTTGCACC
177
Drd I
Ade I
Dra III
ACTCCAACGTCAAAGGGCGAAAAACCGTCTATCAGGGCGATGGCCCACTACGTGAACCA
TGAGGTTGCAGTTTCCCGCTTTTTGGCAGATAGTCCCGCTACCGGGTGATGCACTTGGT
236
TCACCCTAATCAAGTTTTTTGGGGTCGAGGTGCCGTAAAGCACTAAATCGGAACCCTAA
AGTGGGATTAGTTCAAAAAACCCCAGCTCCACGGCATTTCGTGATTTAGCCTTGGGATT
295
NgoM IV
Nae I
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TCCCTCGGGGGCTAAATCTCGAACTGCCCCTTTCGGCCGCTTGCACCGCTCTTTCCTTC
354
BsrB I
Mbi I
GGAAGAAAGCGAAAGGAGCGGGCGCTAGGGCGCTGGCAAGTGTAGCGGTCACGCTGCGC
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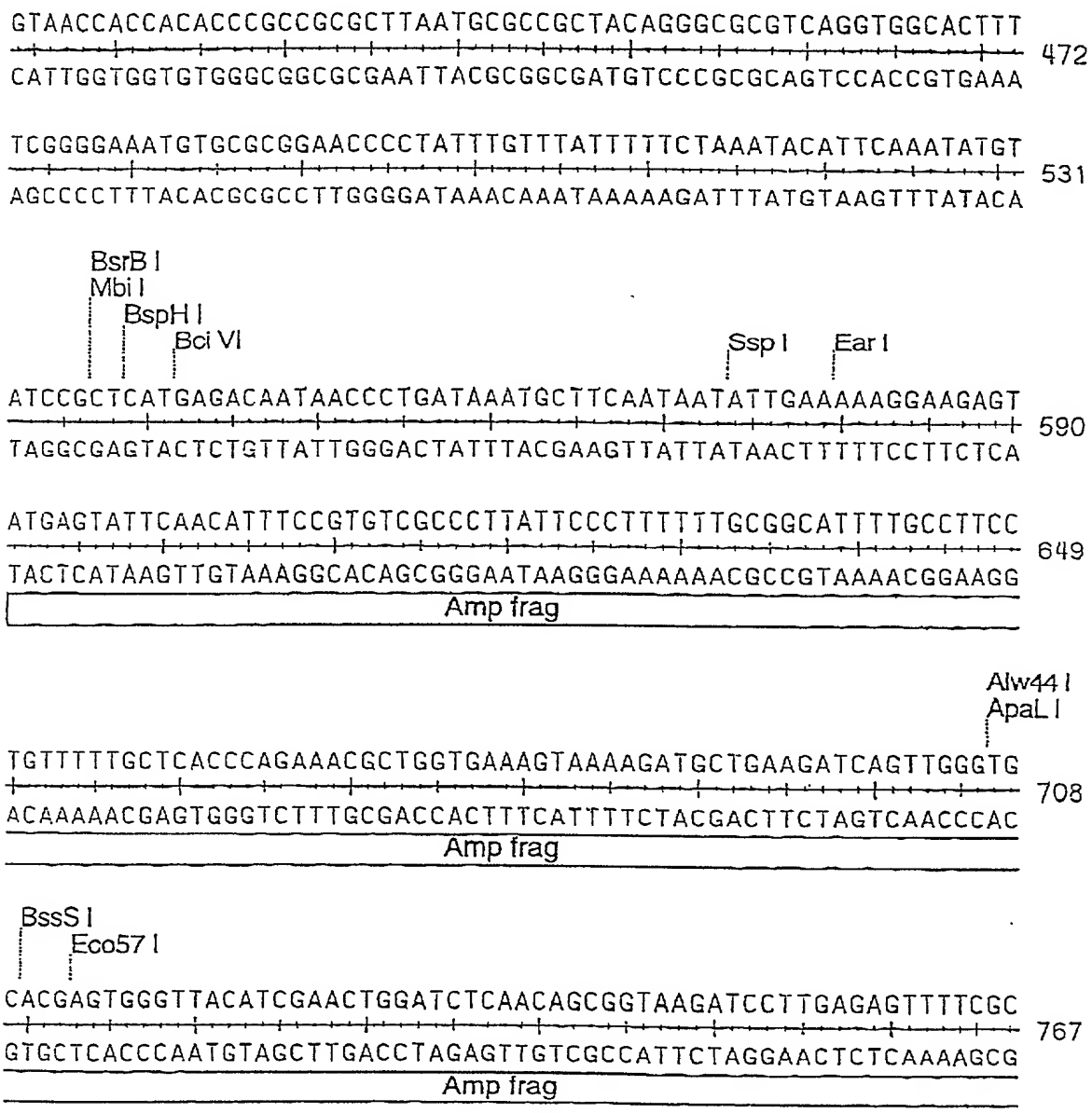
413

Fig. 4A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Mbi I
BspH I
Bci VI
Ssp I
Ear I
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649
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Amp frag
Alw44 I
ApaL I
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708
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Amp frag
BssS I
Eco57 I
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767
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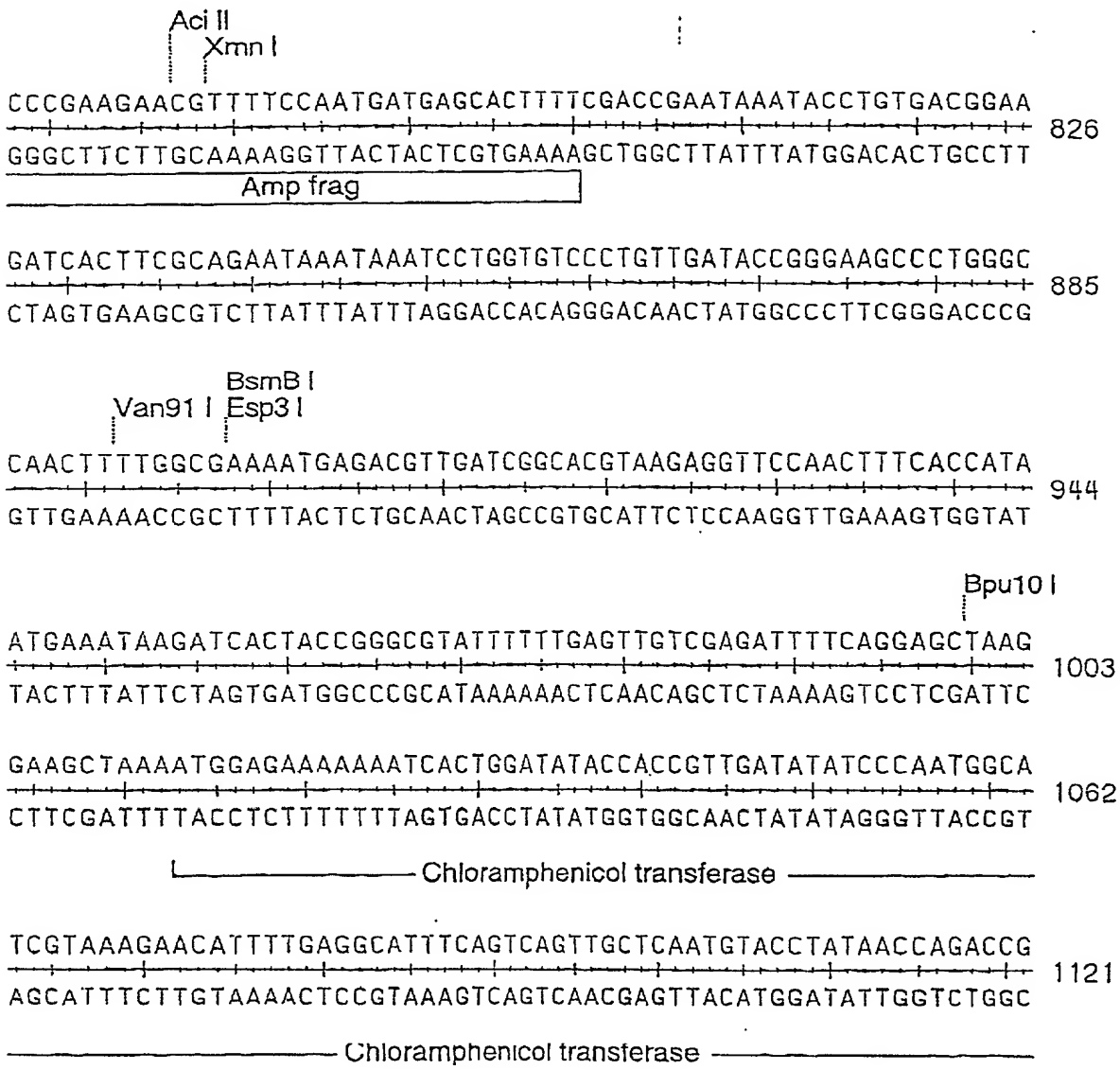
Amp frag

Fig. 4B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826
Amp frag
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CTAGTGAAGCGTCTTATTTATTTAGGACCACAGGGACAACTATGGCCCTTCGGGACCCG
885
BsmB I
Van91 I Esp3 I
CAACTTTTGGCGAAAATGAGACGTTGATCGGCACGTAAGAGGTTCCAACTTTCACCATA
GTTGAAAACCGCTTTTACTCTGCAACTAGCCGTGCATTCTCCAAGGTTGAAAGTGGTAT
944
Bpu10 I
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1003
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1062
Chloramphenicol transferase
TCGTAAAGAACATTTTGAGGCATTTCAGTCAGTTGCTCAATGTACCTATAACCAGACCG
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1121
Chloramphenicol transferase

Fig. 4C


Pvu II
Dra I
TTCAGCTGGATATTACGGCCTTTTTAAAGACCGTAAAGAAAAATAAGCACAAGTTTTAT
AAGTCGACCTATAATGCCGGAAAAATTTCTGGCATTTCTTTTTATTCGTGTTCAAAATA
1180
Chloramphenicol transferase
BsaM I
Acc III
SnaB I
CCGGCCTTTATTCACATTCTTGCCCGCCTGATGAATGCTCATCCGGAATTACGTATGGC
GGCCGGAAATAAGTGTAAGAACGGGCGGACTACTTACGAGTAGGCCTTAATGCATACCG
1239
Chloramphenicol transferase
BseM I
BsrD I
AATGAAAGACGGTGAGCTGGTGATATGGGATAGTGTTCACCCTTGTTACACCGTTTTCC
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1298
Chloramphenicol transferase
Aci II
Bpm I
ATGAGCAAACTGAAACGTTTTCATCGCTCTGGAGTGAATACCACGACGATTTCCGGCAG
TACTCGTTTGACTTTGCAAAAGTAGCGAGACCTCACTTATGGTGCTGCTAAAGGCCGTC
1357
Chloramphenicol transferase
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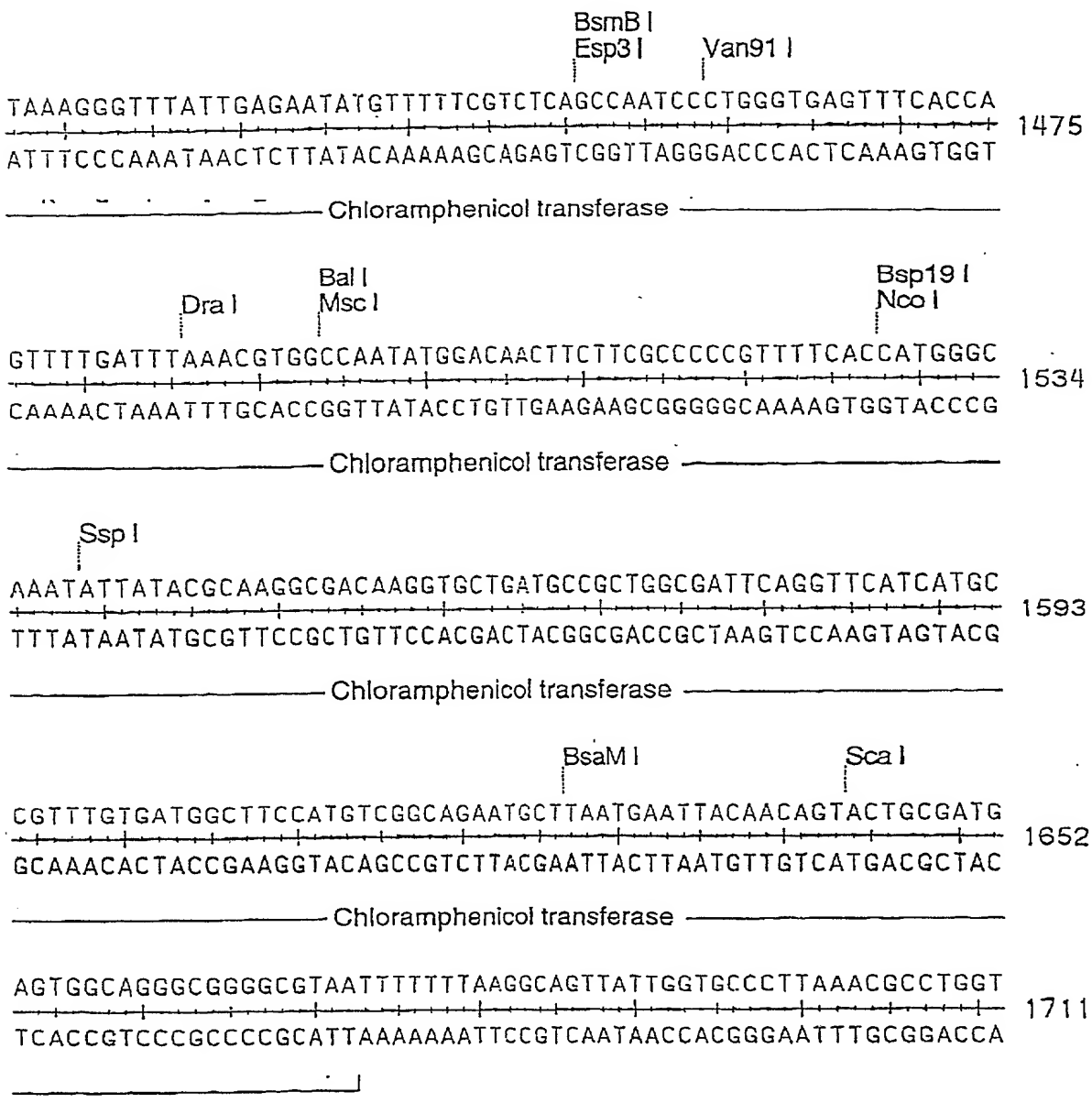
1416
Chloramphenicol transferase

Fig. 4D


BsmB I
Esp3 I
Van91 I
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1475
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Chloramphenicol transferase
Dra I
Bal I
Msc I
Bsp19 I
Nco I
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1534
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Chloramphenicol transferase
Ssp I
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1593
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Chloramphenicol transferase
BsaM I
Sca I
CGTTTGTGATGGCTTCCATGTCGGCAGAATGCTTAATGAATTACAACAGTACTGCGATG
1652
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Chloramphenicol transferase
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Fig. 4E

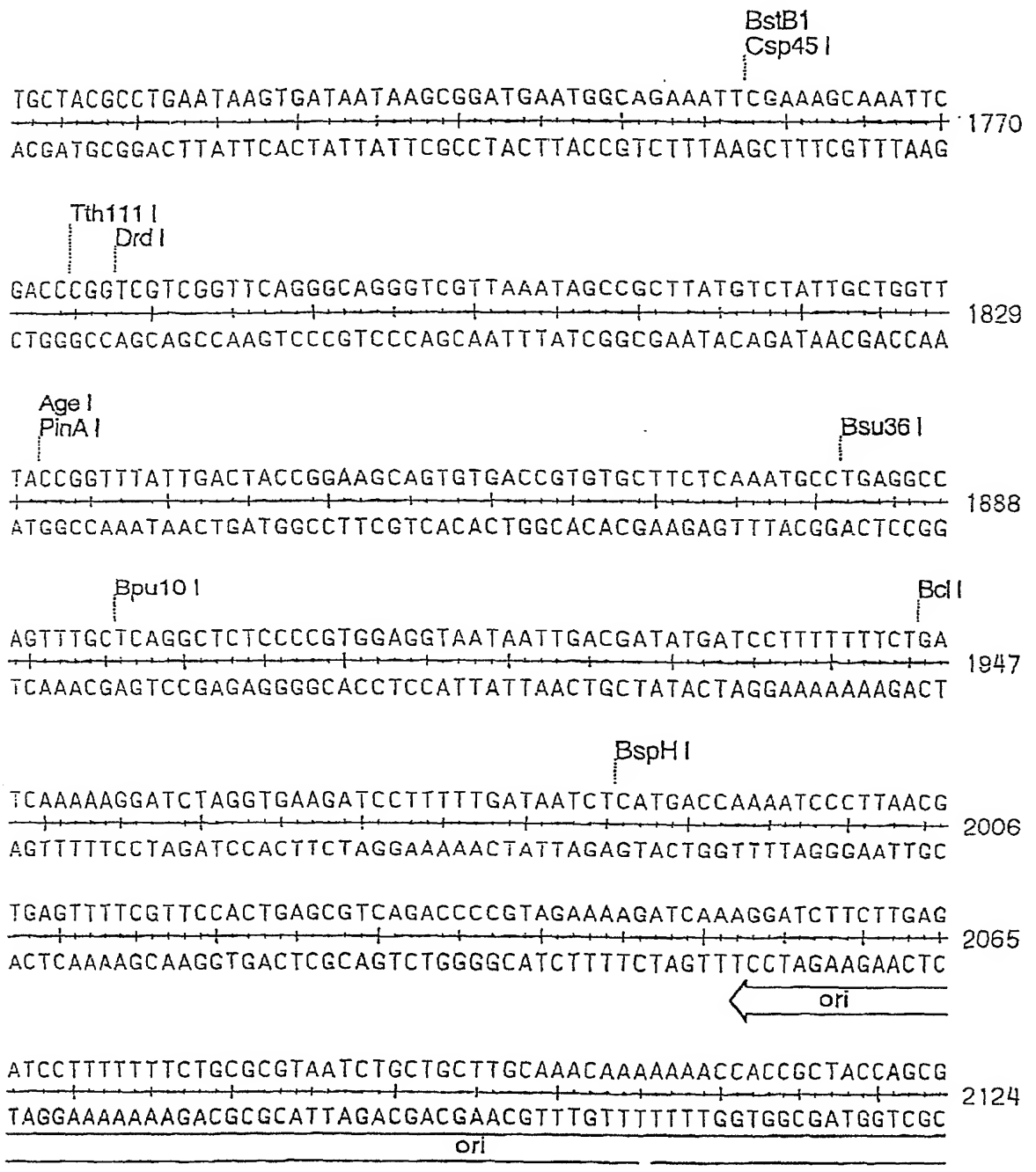
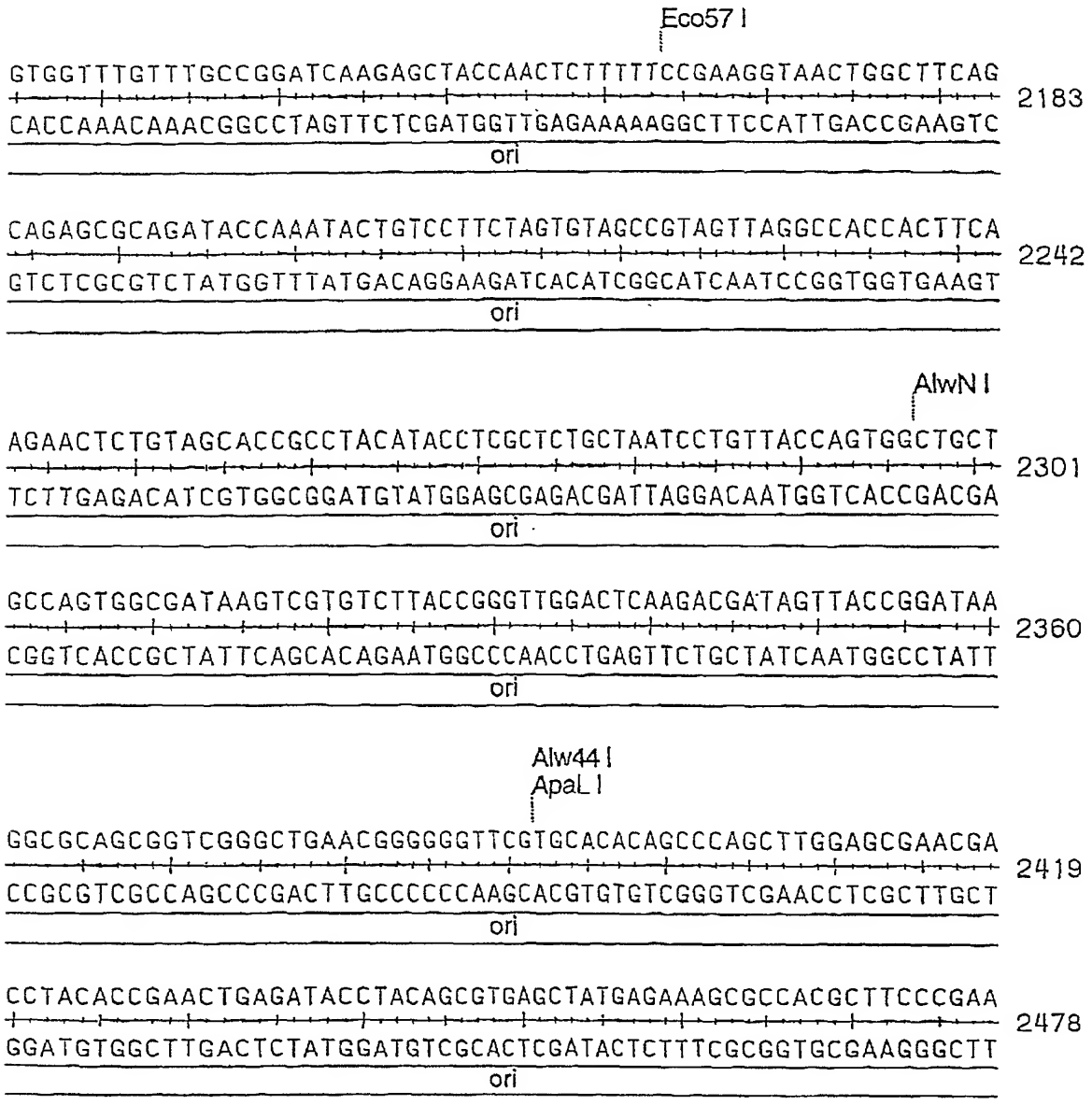


Fig. 4F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2242
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ori
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ori
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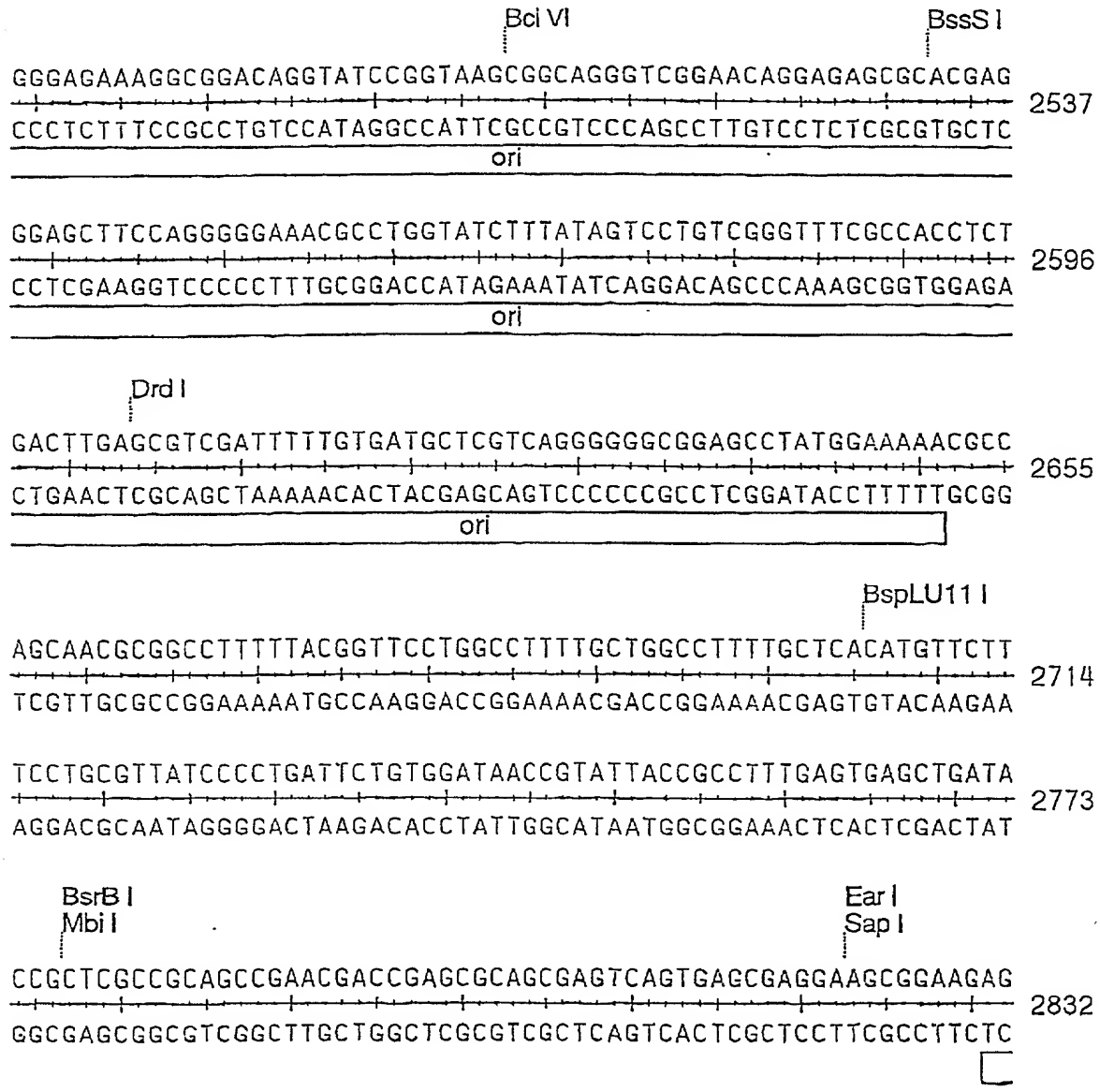
ori

Fig. 4G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ori
DrdI
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2655
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ori
BspLU11 I
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2714
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Mbi I
Ear I
Sap I
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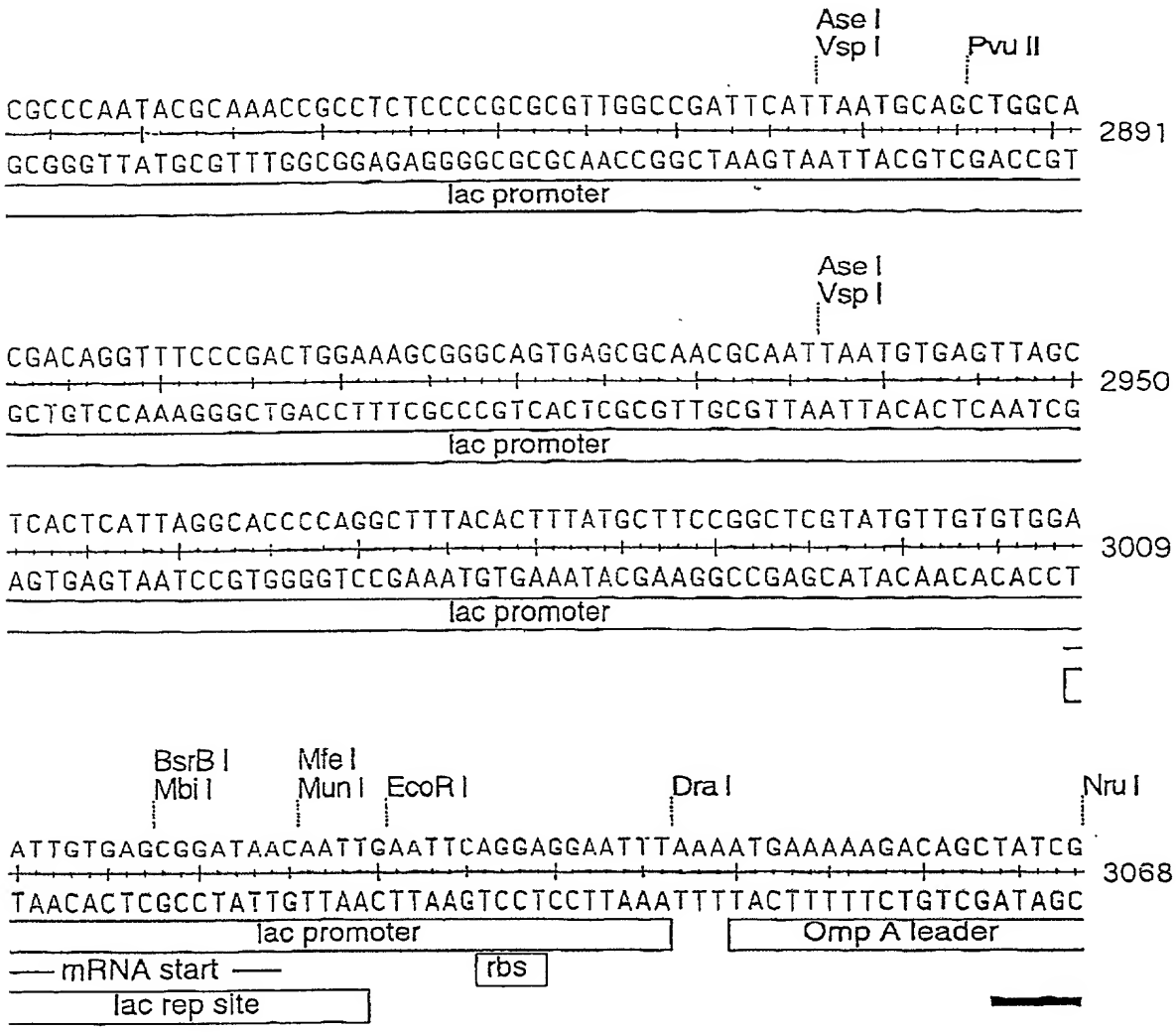
Fig. 4H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lac promoter
BsrB I
Mbi I
Mfe I
Mun I
EcoR I
Dra I
Nru I
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3068
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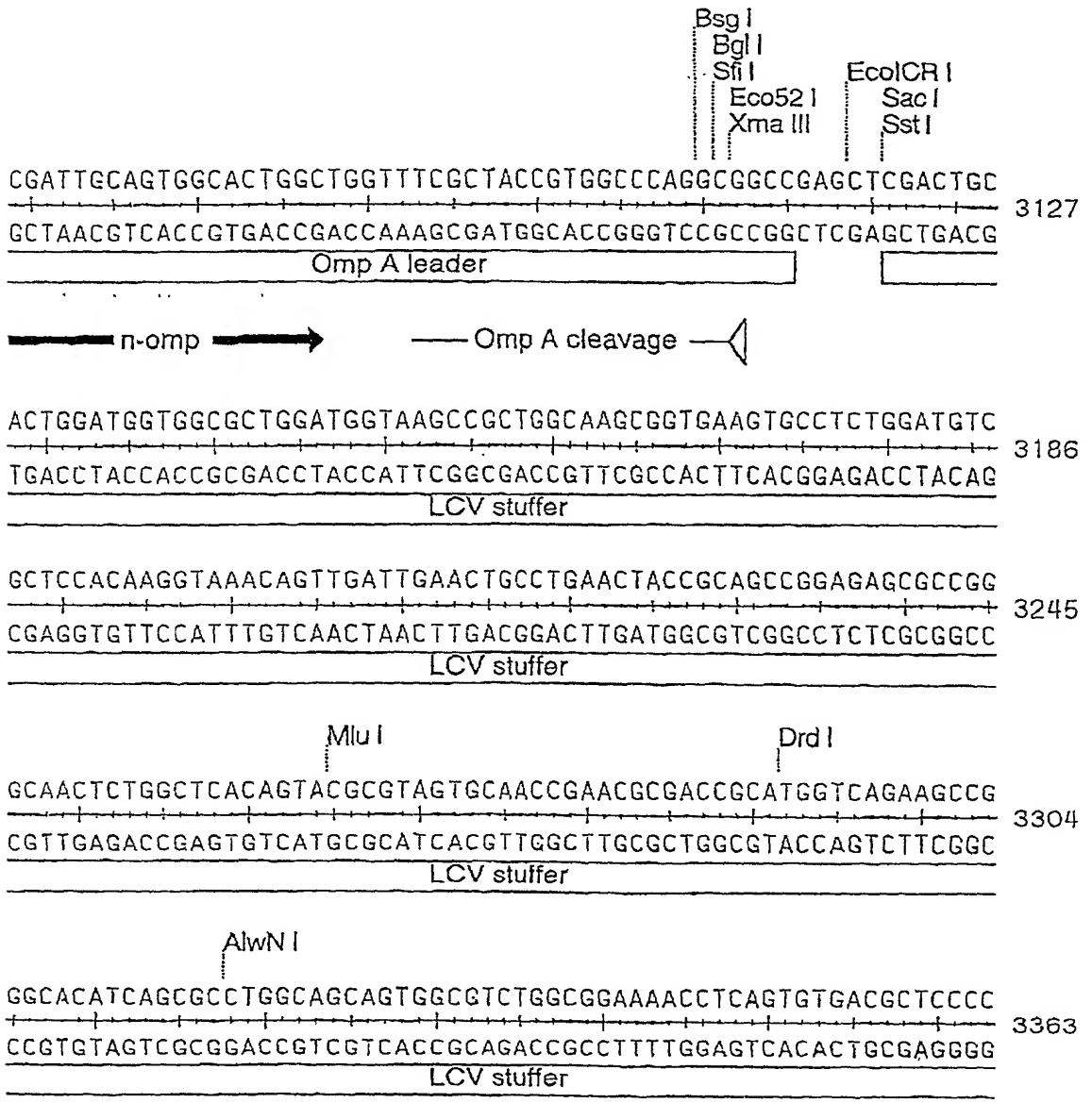
Omp A leader
mRNA start
rbs
lac rep site

Fig. 4I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Xma III
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Sst I
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GCTAACGTCACCGTGACCGACCAAAGCGATGGCACCGGGTCCGCCGGCTCGAGCTGACG
3127
Omp A leader
n-omp
Omp A cleavage
ACTGGATGGTGGCGCTGGATGGTAAGCCGCTGGCAAGCGGTGAAGTGCCTCTGGATGTC
TGACCTACCACCGCGACCTACCATTCGGCGACCGTTCGCCACTTCACGGAGACCTACAG
3186
LCV stuffer
GCTCCACAAGGTAAACAGTTGATTGAACTGCCTGAACTACCGCAGCCGGAGAGCGCCGG
CGAGGTGTTCCATTTGTCAACTAACTTGACGGACTTGATGGCGTCGGCCTCTCGCGGCC
3245
LCV stuffer
Mlu I
Drd I
GCAACTCTGGCTCACAGTACGCGTAGTGCAACCGAACGCGACCGCATGGTCAGAAGCCG
CGTTGAGACCGAGTGTCATGCGCATCACGTTGGCTTGCGCTGGCGTACCAGTCTTCGGC
3304
LCV stuffer
AlwN I
GGCACATCAGCGCCTGGCAGCAGTGGCGTCTGGCGGAAAACCTCAGTGTGACGCTCCCC
CCGTGTAGTCGCGGACCGTCGTCACCGCAGACCGCCTTTTGGAGTCACACTGCGAGGGG
3363
LCV stuffer

Fig. 4J


Xcm I
BstX I
GCCGCGTCCCACGCCATCCCGCATCTGACCACCAGCGAAATGGATTTTTGCATCGAGCT
3422
CGGCGCAGGGTGCGGTAGGGCGTAGACTGGTGGTCGCTTTACCTAAAAACGTAGCTCGA
LCV stuffer
Bgl I
GGGTAATAAGCGTTGGCAATTTAACCGCCAGTCAGGCTTTCTTTCACAGATGTGGATTG
3481
CCCATTATTCGCAACCGTTAAATTGGCGGTCAGTCCGAAAGAAAGTGTCTACACCTAAC
LCV stuffer
Alw44 I
ApaL I
GCGATAAAAAACAACTGCTGACGCCGCTGCGCGATCAGTTCACCCGTGCACCGCTGGAT
3540
CGCTATTTTTTGTTGACGACTGCGGCGACGCGCTAGTCAAGTGGGCACGTGGCGACCTA
LCV stuffer
AACGACATTGGCGTAAGTGAAGCGACCCGCATTGACCCTAACGCCTGGGTCGAACGCTG
3599
TTGCTGTAACCGCATTCACTTCGCTGGGCGTAACTGGGATTGCGGACCCAGCTTGCGAC
LCV stuffer
Alw44 I
ApaL I
GAAGGCGGCGGGCCATTACCAGGCCGAAGCAGCGTTGTTGCAGTGCACGGCAGATACAC
3658
CTTCCGCCGCCCGGTAATGGTCCGGCTTCGTCGCAACAACGTCACGTGCCGTCTATGTG
LCV stuffer

Fig. 4K

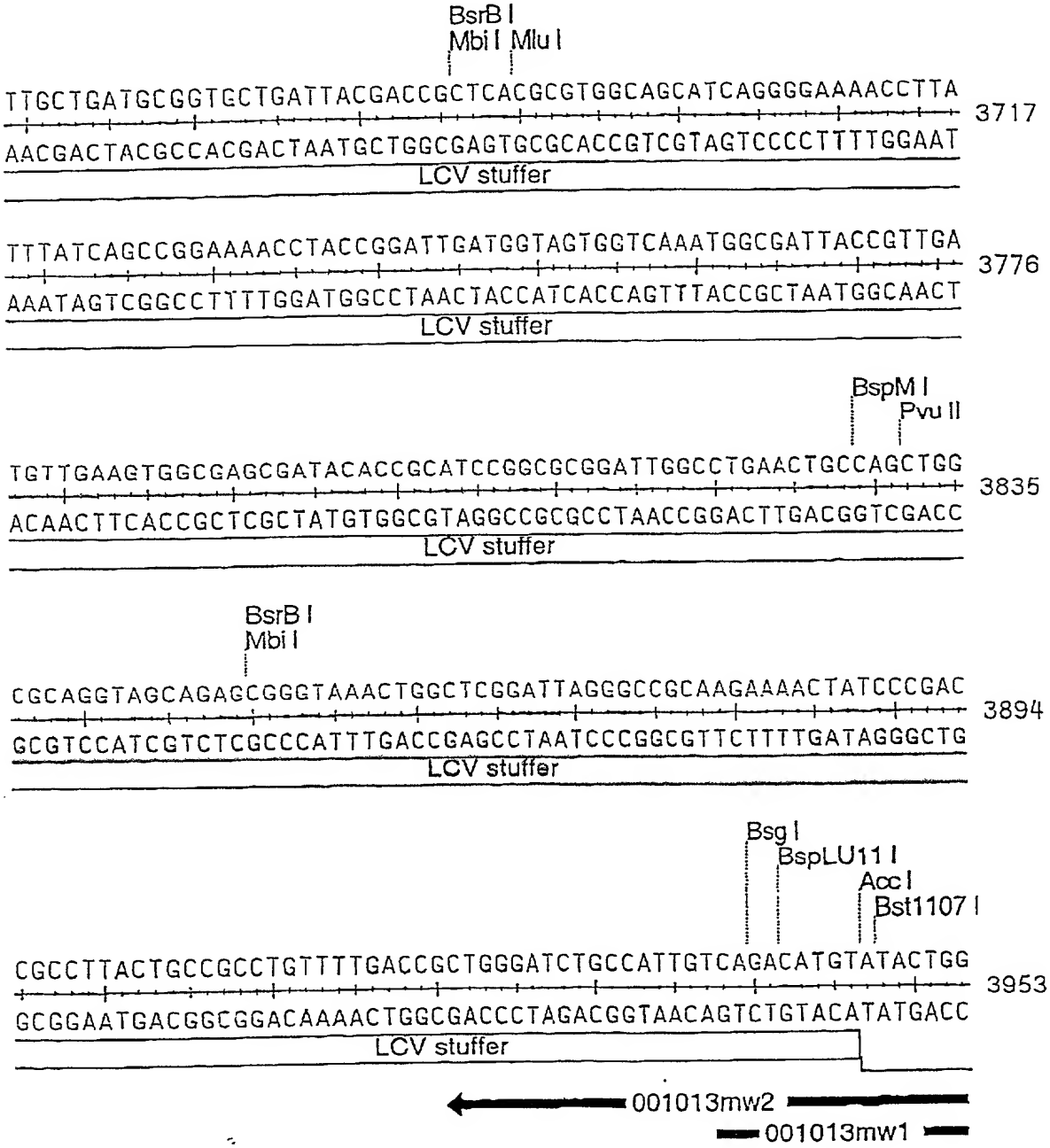

BsrB I
Mbi I Mlu I
TTGCTGATGCGGTGCTGATTACGACCGCTCACGCGTGGCAGCATCAGGGGAAAACCTTA
3717
AACGACTACGCCACGACTAATGCTGGCGAGTGCGCACCGTCGTAGTCCCCTTTTGGAAT
LCV stuffer
TTTATCAGCCGGAAAACCTACCGGATTGATGGTAGTGGTCAAATGGCGATTACCGTTGA
3776
AAATAGTCGGCCTTTTGGATGGCCTAACTACCATCACCAGTTTACCGCTAATGGCAACT
LCV stuffer
BspM I
Pvu II
TGTTGAAGTGGCGAGCGATACACCGCATCCGGCGCGGATTGGCCTGAACTGCCAGCTGG
3835
ACAACTTCACCGCTCGCTATGTGGCGTAGGCCGCGCCTAACCGGACTTGACGGTCGACC
LCV stuffer
BsrB I
Mbi I
CGCAGGTAGCAGAGCGGGTAAACTGGCTCGGATTAGGGCCGCAAGAAAACTATCCCGAC
3894
GCGTCCATCGTCTCGCCCATTTGACCGAGCCTAATCCCGGCGTTCTTTTGATAGGGCTG
LCV stuffer
Bsg I
BspLU11 I
Acc I
Bst1107 I
CGCCTTACTGCCGCCTGTTTTGACCGCTGGGATCTGCCATTGTCAGACATGTATACTGG
3953
GCGGAATGACGGCGGACAAAACTGGCGACCCTAGACGGTAACAGTCTGTACATATGACC
LCV stuffer
001013mw2
001013mw1

Fig. 4L

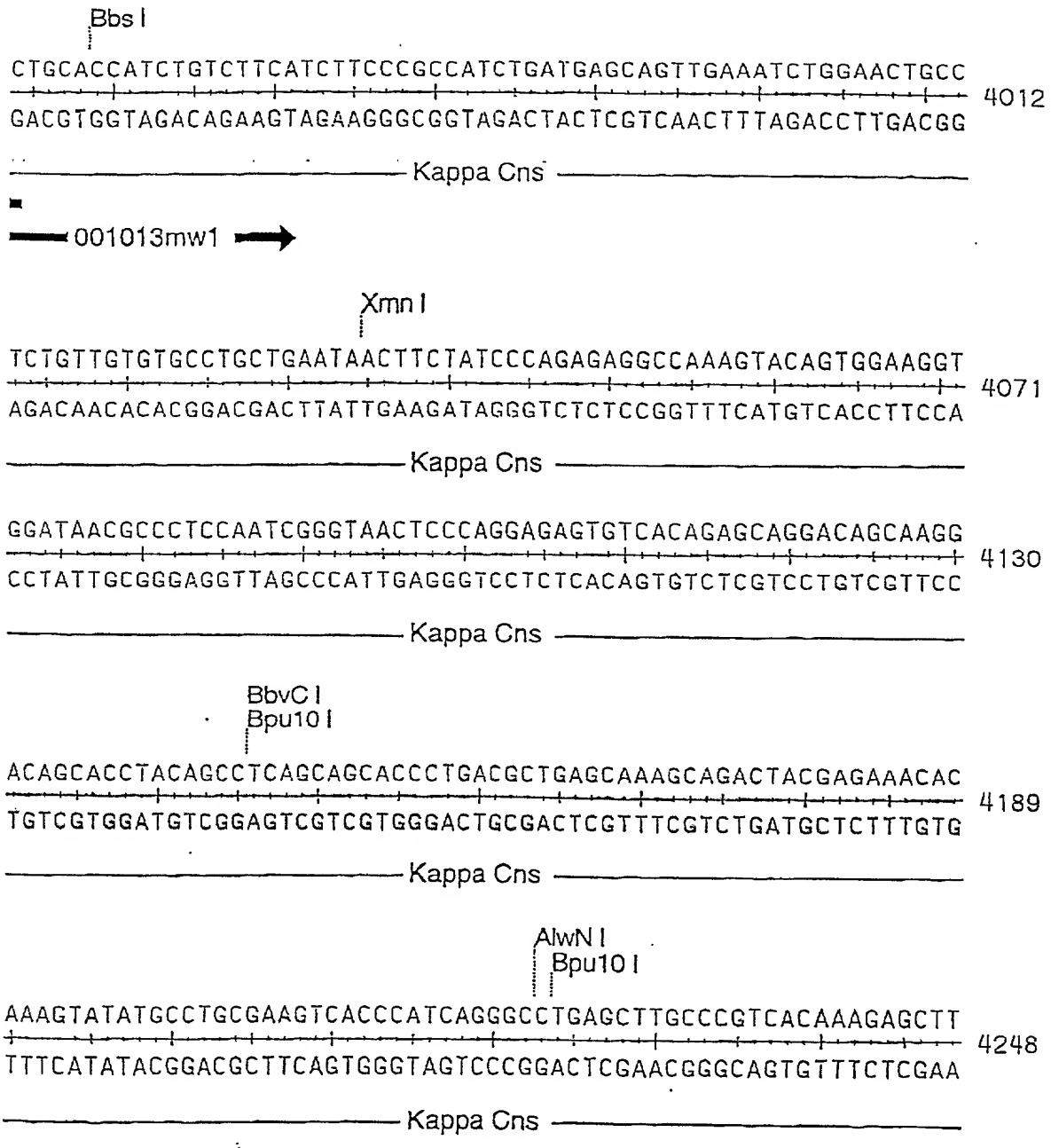
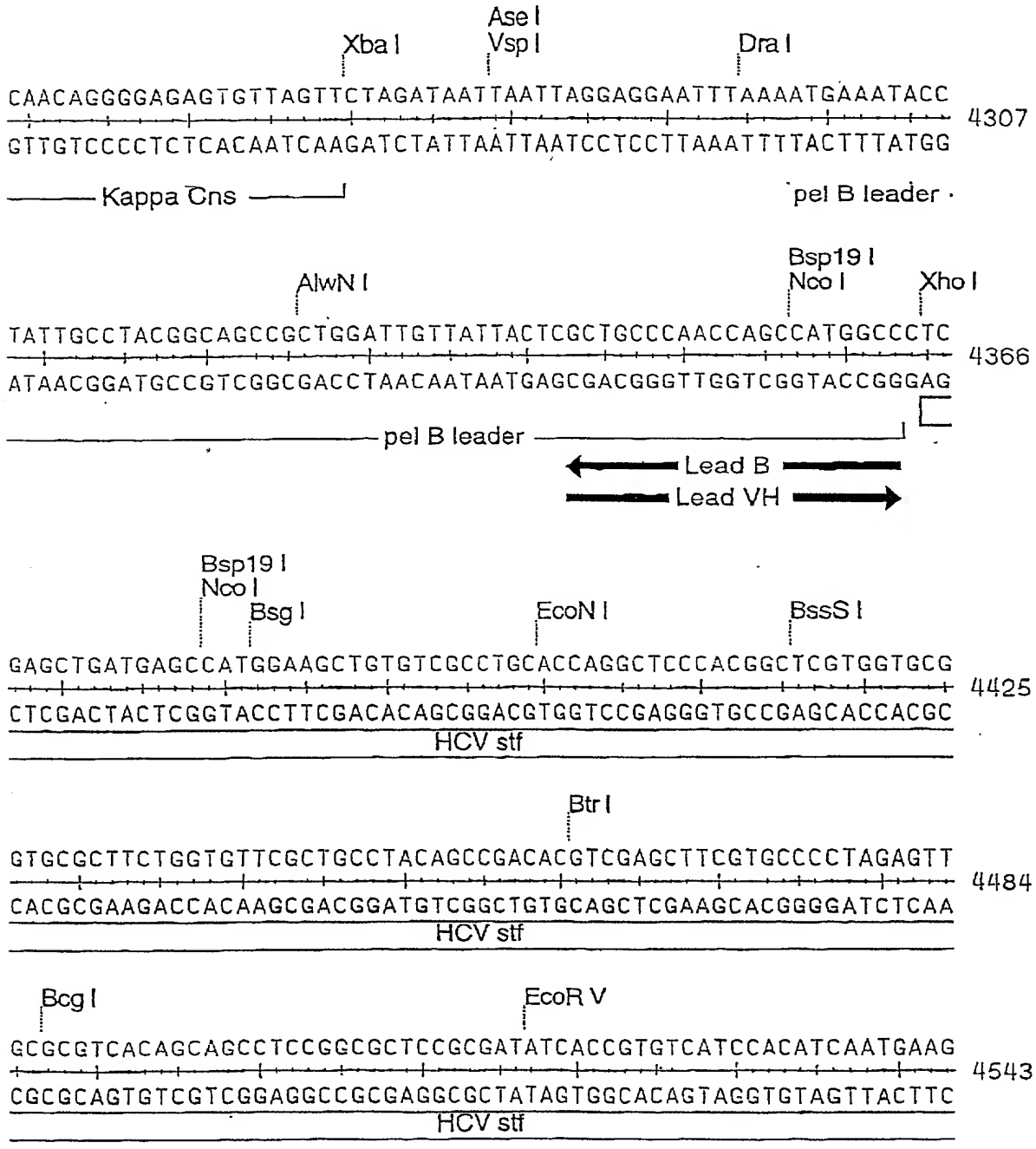

Bbs I
CTGCACCATCTGTCTTCATCTTCCCGCCATCTGATGAGCAGTTGAAATCTGGAACTGCC
GACGTGGTAGACAGAAGTAGAAGGGCGGTAGACTACTCGTCAACTTTAGACCTTGACGG
4012
Kappa Cns
001013mw1
Xmn I
TCTGTTGTGTGCCTGCTGAATAACTTCTATCCCAGAGAGGCCAAAGTACAGTGGAAGGT
AGACAACACACGGACGACTTATTGAAGATAGGGTCTCTCCGGTTTCATGTCACCTTCCA
4071
Kappa Cns
GGATAACGCCCTCCAATCGGGTAACTCCCAGGAGAGTGTCACAGAGCAGGACAGCAAGG
CCTATTGCGGGAGGTTAGCCCATTGAGGGTCCTCTCACAGTGTCTCGTCCTGTCGTTCC
4130
Kappa Cns
BbvC I
Bpu10 I
ACAGCACCTACAGCCTCAGCAGCACCCTGACGCTGAGCAAAGCAGACTACGAGAAACAC
TGTCGTGGATGTCGGAGTCGTCGTGGGACTGCGACTCGTTTCGTCTGATGCTCTTTGTG
4189
Kappa Cns
AlwN I
Bpu10 I
AAAGTATATGCCTGCGAAGTCACCCATCAGGGCCTGAGCTTGCCCGTCACAAAGAGCTT
TTTCATATACGGACGCTTCAGTGGGTAGTCCCGGACTCGAACGGGCAGTGTTTCTCGAA
4248
Kappa Cns

Fig. 4M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Xba I
Vsp I
Dra I
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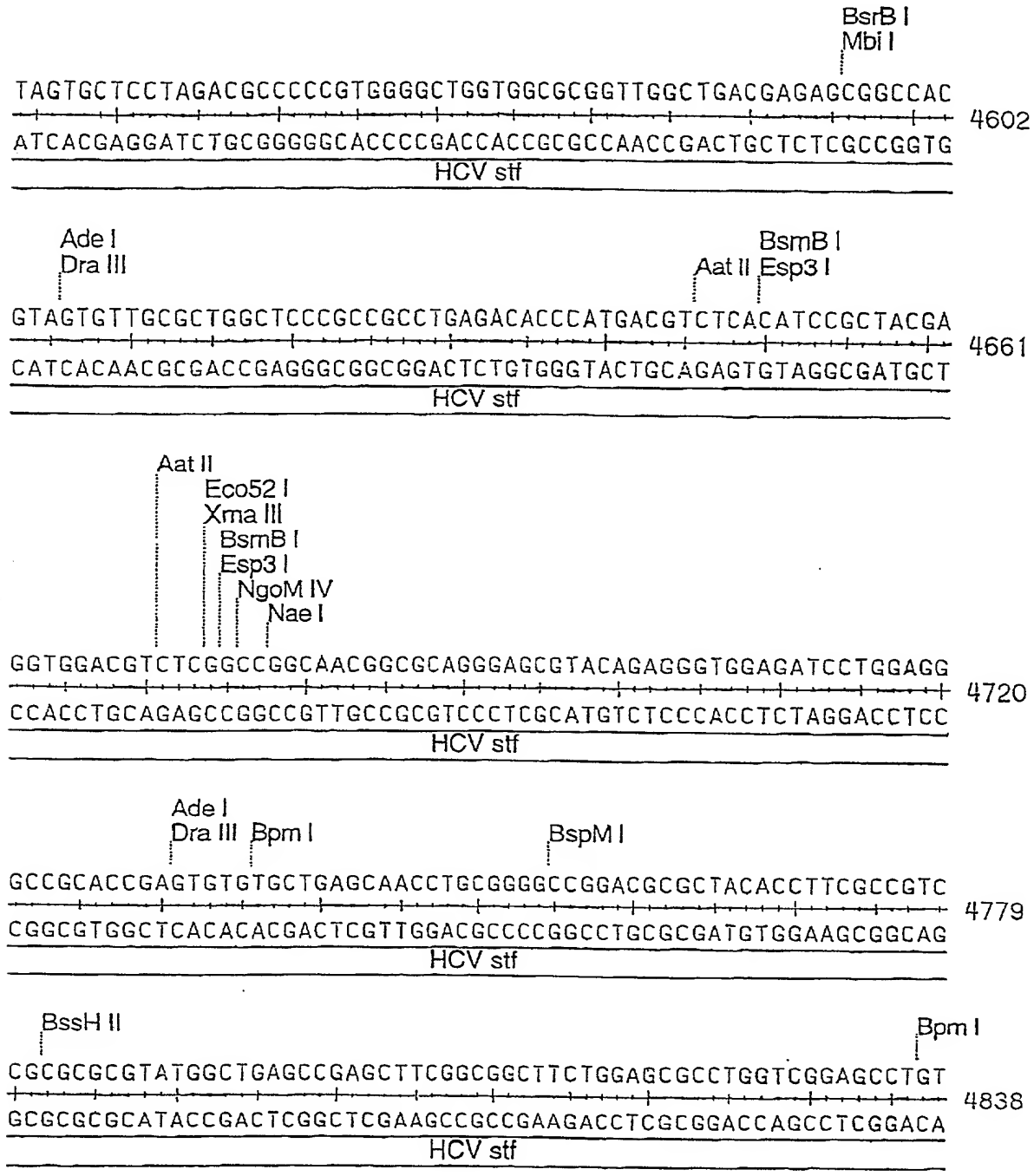
4307
GTTGTCCCCTCTCACAATCAAGATCTATTAATTAATCCTCCTTAAATTTTACTTTATGG
Kappa Cns
pel B leader
Bsp19 I
Nco I
AlwN I
Xho I
TATTGCCTACGGCAGCCGCTGGATTGTTATTACTCGCTGCCCAACCAGCCATGGCCCTC
4366
ATAACGGATGCCGTCGGCGACCTAACAATAATGAGCGACGGGTTGGTCGGTACCGGGAG
pel B leader
Lead B
Lead VH
Bsp19 I
Nco I
Bsg I
EcoN I
BssS I
GAGCTGATGAGCCATGGAAGCTGTGTCGCCTGCACCAGGCTCCCACGGCTCGTGGTGCG
4425
CTCGACTACTCGGTACCTTCGACACAGCGGACGTGGTCCGAGGGTGCCGAGCACCACGC
HCV stf
Btr I
GTGCGCTTCTGGTGTTCGCTGCCTACAGCCGACACGTCGAGCTTCGTGCCCCTAGAGTT
4484
CACGCGAAGACCACAAGCGACGGATGTCGGCTGTGCAGCTCGAAGCACGGGGATCTCAA
HCV stf
Bcg I
EcoR V
GCGCGTCACAGCAGCCTCCGGCGCTCCGCGATATCACCGTGTCATCCACATCAATGAAG
4543
CGCGCAGTGTCGTCGGAGGCCGCGAGGCGCTATAGTGGCACAGTAGGTGTAGTTACTTC
HCV stf

Fig. 4N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Mbi I
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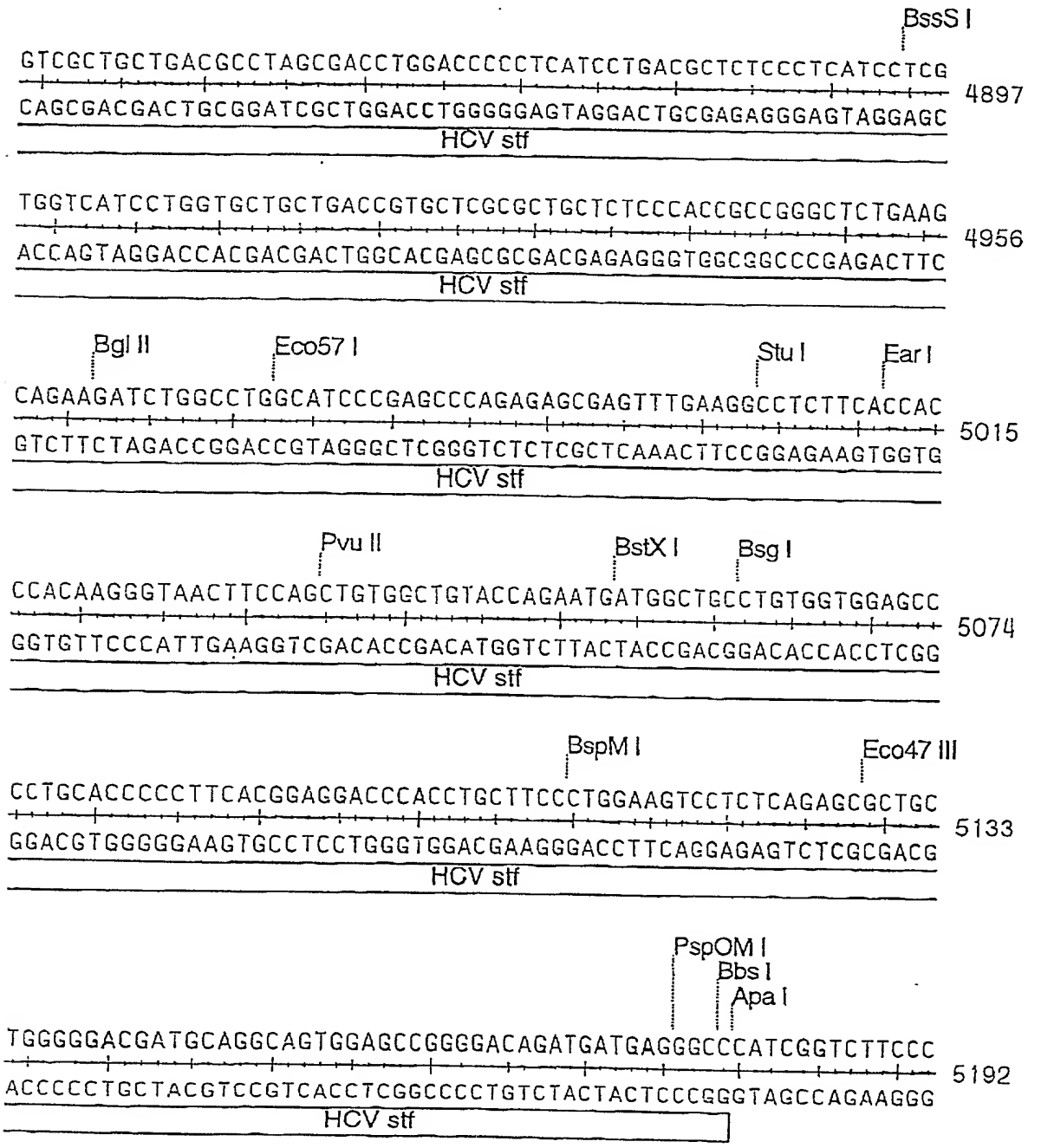
4602
ATCACGAGGATCTGCGGGGGCACCCCGACCACCGCGCCAACCGACTGCTCTCGCCGGTG
HCV stf
Ade I
Dra III
BsmB I
Aat II Esp3 I
GTAGTGTTGCGCTGGCTCCCGCCGCCTGAGACACCCATGACGTCTCACATCCGCTACGA
4661
CATCACAACGCGACCGAGGGCGGCGGACTCTGTGGGTACTGCAGAGTGTAGGCGATGCT
HCV stf
Aat II
Eco52 I
Xma III
BsmB I
Esp3 I
NgoM IV
Nae I
GGTGGACGTCTCGGCCGGCAACGGCGCAGGGAGCGTACAGAGGGTGGAGATCCTGGAGG
4720
CCACCTGCAGAGCCGGCCGTTGCCGCGTCCCTCGCATGTCTCCCACCTCTAGGACCTCC
HCV stf
Ade I
Dra III
Bpm I
BspM I
GCCGCACCGAGTGTGTGCTGAGCAACCTGCGGGGCCGGACGCGCTACACCTTCGCCGTC
4779
CGGCGTGGCTCACACACGACTCGTTGGACGCCCCGGCCTGCGCGATGTGGAAGCGGCAG
HCV stf
BssH II
Bpm I
CGCGCGCGTATGGCTGAGCCGAGCTTCGGCGGCTTCTGGAGCGCCTGGTCGGAGCCTGT
4838
GCGCGCGCATACCGACTCGGCTCGAAGCCGCCGAAGACCTCGCGGACCAGCCTCGGACA
HCV stf

Fig. 4O


BssS I
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CAGCGACGACTGCGGATCGCTGGACCTGGGGGAGTAGGACTGCGAGAGGGAGTAGGAGC
4897
HCV stf
TGGTCATCCTGGTGCTGCTGACCGTGCTCGCGCTGCTCTCCCACCGCCGGGCTCTGAAG
ACCAGTAGGACCACGACGACTGGCACGAGCGCGACGAGAGGGTGGCGGCCCGAGACTTC
4956
HCV stf
Bgl II
Eco57 I
Stu I
Ear I
CAGAAGATCTGGCCTGGCATCCCGAGCCCAGAGAGCGAGTTTGAAGGCCTCTTCACCAC
GTCTTCTAGACCGGACCGTAGGGCTCGGGTCTCTCGCTCAAACTTCCGGAGAAGTGGTG
5015
HCV stf
Pvu II
BstX I
Bsg I
CCACAAGGGTAACTTCCAGCTGTGGCTGTACCAGAATGATGGCTGCCTGTGGTGGAGCC
GGTGTTCCCATTGAAGGTCGACACCGACATGGTCTTACTACCGACGGACACCACCTCGG
5074
HCV stf
BspM I
Eco47 III
CCTGCACCCCCTTCACGGAGGACCCACCTGCTTCCCTGGAAGTCCTCTCAGAGCGCTGC
GGACGTGGGGGAAGTGCCTCCTGGGTGGACGAAGGGACCTTCAGGAGAGTCTCGCGACG
5133
HCV stf
PspOM I
Bbs I
Apa I
TGGGGGACGATGCAGGCAGTGGAGCCGGGGACAGATGATGAGGGCCCATCGGTCTTCCC
ACCCCCTGCTACGTCCGTCACCTCGGCCCCTGTCTACTACTCCCGGGTAGCCAGAAGGG
5192
HCV stf

Fig. 4P

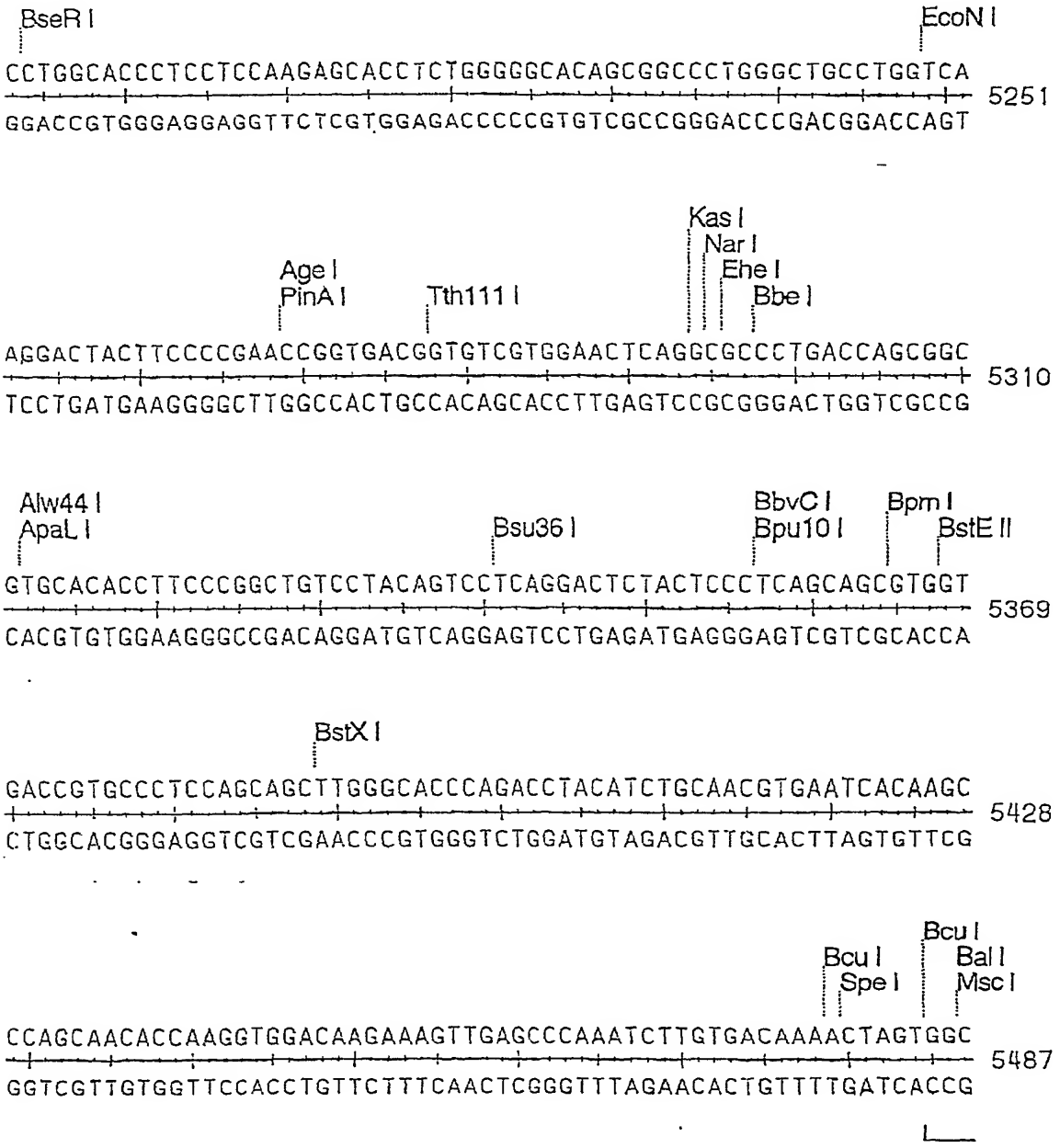
BseR I
EcoN I
CCTGGCACCCTCCTCCAAGAGCACCTCTGGGGGCACAGCGGCCCTGGGCTGCCTGGTCA
GGACCGTGGGAGGAGGTTCTCGTGGAGACCCCCGTGTCGCCGGGACCCGACGGACCAGT
5251
Kas I
Nar I
Age I
Ehe I
PinA I
Tth111 I
Bbe I
AGGACTACTTCCCCGAACCGGTGACGGTGTCGTGGAACTCAGGCGCCCTGACCAGCGGC
TCCTGATGAAGGGGCTTGGCCACTGCCACAGCACCTTGAGTCCGCGGGACTGGTCGCCG
5310
Alw44 I
ApaL I
Bsu36 I
BbvC I
Bpu10 I
Bpm I
BstE II
GTGCACACCTTCCCGGCTGTCCTACAGTCCTCAGGACTCTACTCCCTCAGCAGCGTGGT
CACGTGTGGAAGGGCCGACAGGATGTCAGGAGTCCTGAGATGAGGGAGTCGTCGCACCA
5369
BstX I
GACCGTGCCCTCCAGCAGCTTGGGCACCCAGACCTACATCTGCAACGTGAATCACAAGC
CTGGCACGGGAGGTCGTCGAACCCGTGGGTCTGGATGTAGACGTTGCACTTAGTGTTCG
5428
Bcu I
Bcu I
Bal I
Spe I
Msc I
CCAGCAACACCAAGGTGGACAAGAAAGTTGAGCCCAAATCTTGTGACAAAACTAGTGGC
GGTCGTTGTGGTTCCACCTGTTCTTTCAACTCGGGTTTAGAACACTGTTTTGATCACCG
5487

Fig. 4Q

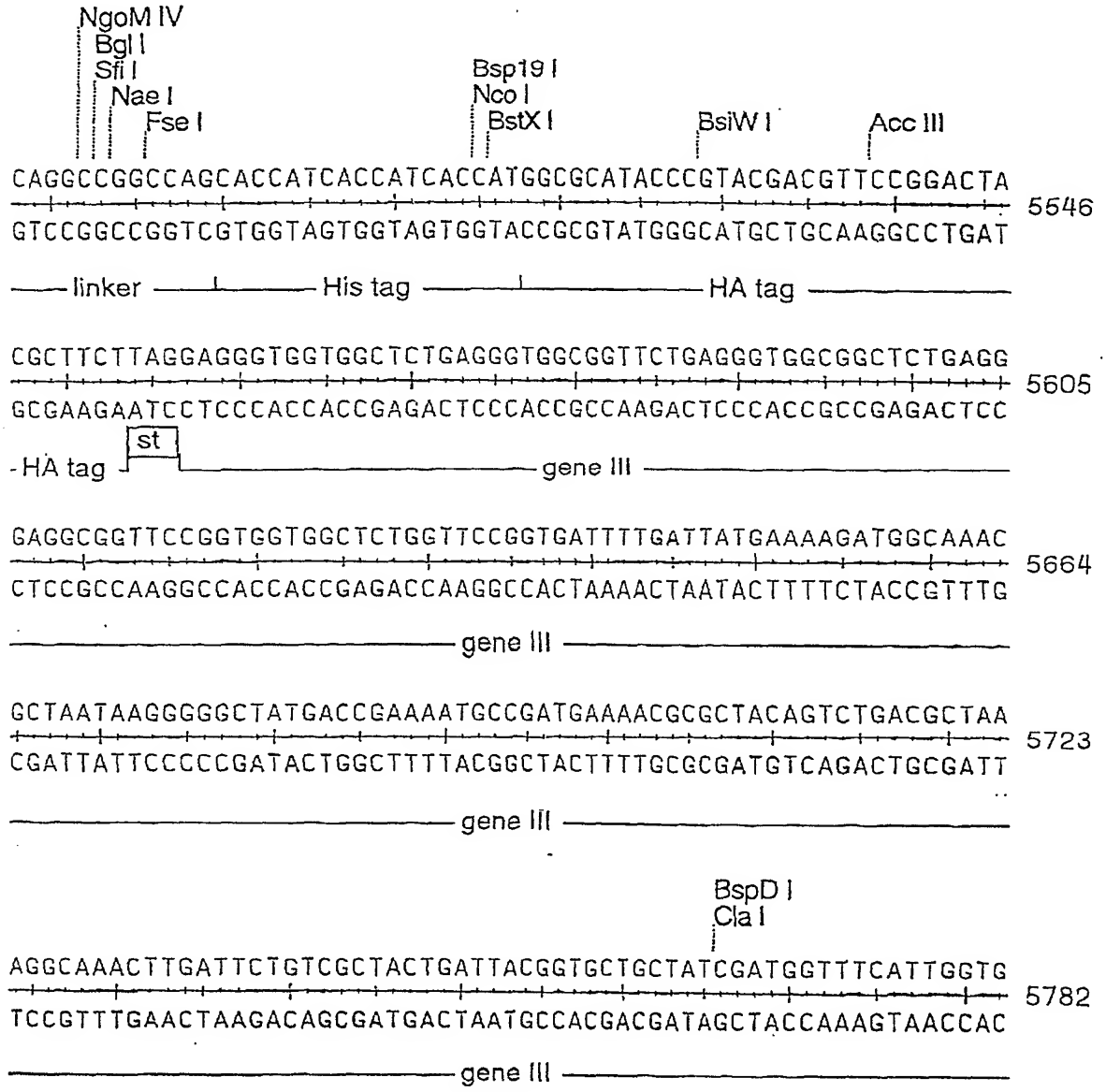
NgoM IV
Bgl I
Sfi I
Nae I
Fse I
Bsp19 I
Nco I
BstX I
BsiW I
Acc III
CAGGCCGGCCAGCACCATCACCATCACCATGGCGCATACCCGTACGACGTTCCGGACTA
GTCCGGCCGGTCGTGGTAGTGGTAGTGGTACCGCGTATGGGCATGCTGCAAGGCCTGAT
5546
linker
His tag
HA tag
CGCTTCTTAGGAGGGTGGTGGCTCTGAGGGTGGCGGTTCTGAGGGTGGCGGCTCTGAGG
GCGAAGAATCCTCCCACCACCGAGACTCCCACCGCCAAGACTCCCACCGCCGAGACTCC
5605
HA tag
st
gene III
GAGGCGGTTCCGGTGGTGGCTCTGGTTCCGGTGATTTTGATTATGAAAAGATGGCAAAC
CTCCGCCAAGGCCACCACCGAGACCAAGGCCACTAAAACTAATACTTTTCTACCGTTTG
5664
gene III
GCTAATAAGGGGGCTATGACCGAAAATGCCGATGAAAACGCGCTACAGTCTGACGCTAA
CGATTATTCCCCCGATACTGGCTTTTACGGCTACTTTTGCGCGATGTCAGACTGCGATT
5723
gene III
BspD I
Cla I
AGGCAAACTTGATTCTGTCGCTACTGATTACGGTGCTGCTATCGATGGTTTCATTGGTG
TCCGTTTGAACTAAGACAGCGATGACTAATGCCACGACGATAGCTACCAAAGTAACCAC
5782
gene III

Fig. 4R

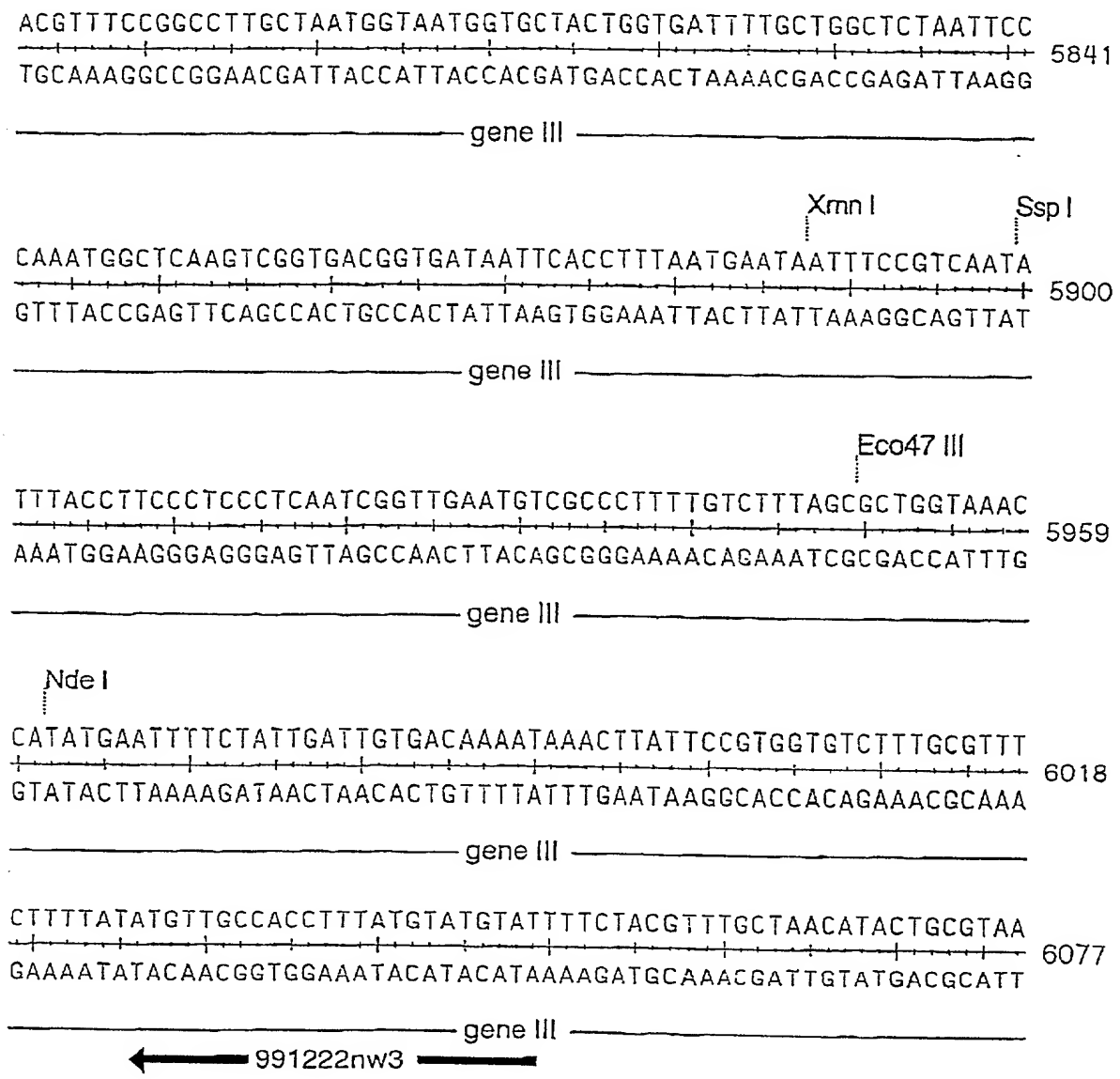
ACGTTTCCGGCCTTGCTAATGGTAATGGTGCTACTGGTGATTTTGCTGGCTCTAATTCC
TGCAAAGGCCGGAACGATTACCATTACCACGATGACCACTAAAACGACCGAGATTAAGG
5841
gene III
Xmn I
Ssp I
CAAATGGCTCAAGTCGGTGACGGTGATAATTCACCTTTAATGAATAATTTCCGTCAATA
GTTTACCGAGTTCAGCCACTGCCACTATTAAGTGGAAATTACTTATTAAAGGCAGTTAT
5900
gene III
Eco47 III
TTTACCTTCCCTCCCTCAATCGGTTGAATGTCGCCCTTTTGTCTTTAGCGCTGGTAAAC
AAATGGAAGGGAGGGAGTTAGCCAACTTACAGCGGGAAAACAGAAATCGCGACCATTTG
5959
gene III
Nde I
CATATGAATTTTCTATTGATTGTGACAAAATAAACTTATTCCGTGGTGTCTTTGCGTTT
GTATACTTAAAAGATAACTAACACTGTTTTATTTGAATAAGGCACCACAGAAACGCAAA
6018
gene III
CTTTTATATGTTGCCACCTTTATGTATGTATTTTCTACGTTTGCTAACATACTGCGTAA
GAAAATATACAACGGTGGAAATACATACATAAAAGATGCAAACGATTGTATGACGCATT
6077
gene III
991222nw3

Fig. 4S

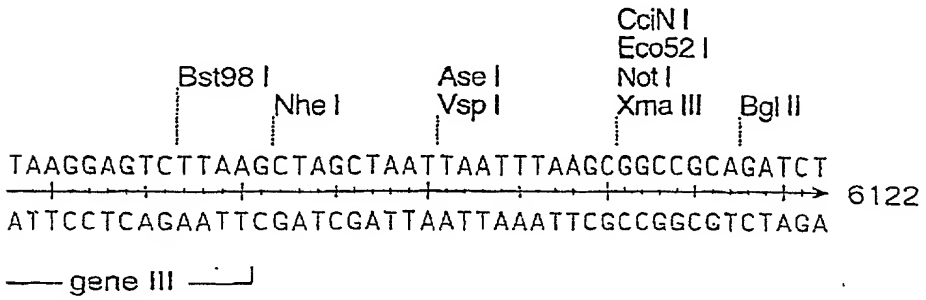
CciN I
Eco52 I
Not I
Xma III
Bst98 I
Nhe I
Ase I
Vsp I
Bgl II
TAAGGAGTCTTAAGCTAGCTAATTAATTTAAGCGGCCGCAGATCT
6122
ATTCCTCAGAATTCGATCGATTAATTAAATTCGCCGGCGTCTAGA
gene III

Fig. 4T

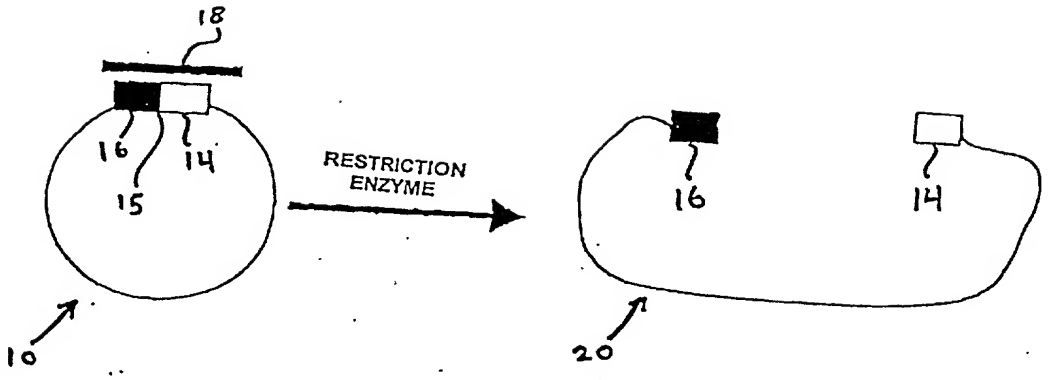

FIG. 5A

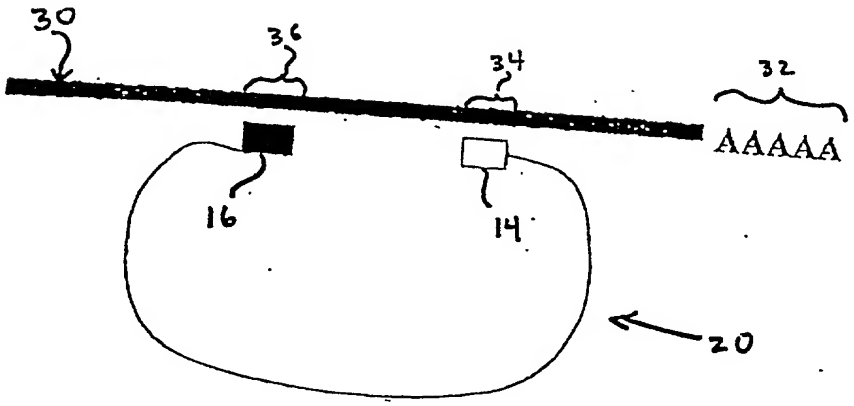

FIG. 5B

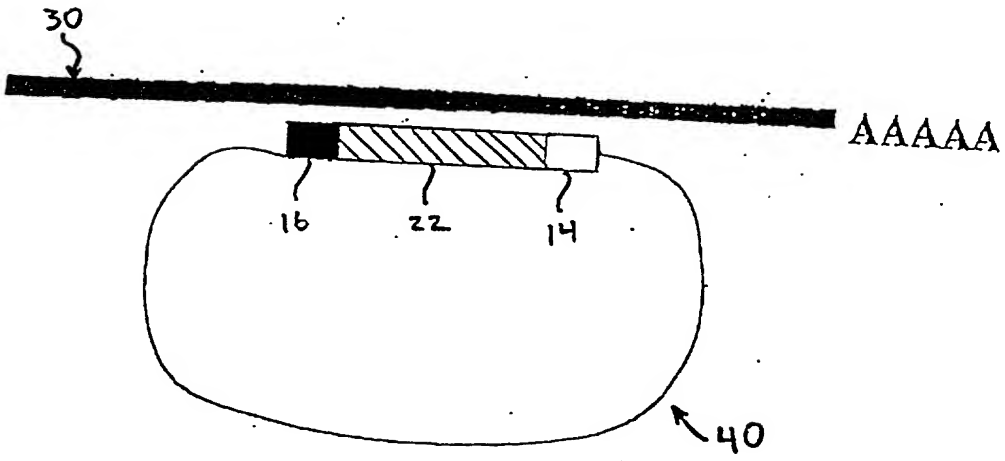

FIG. 5C

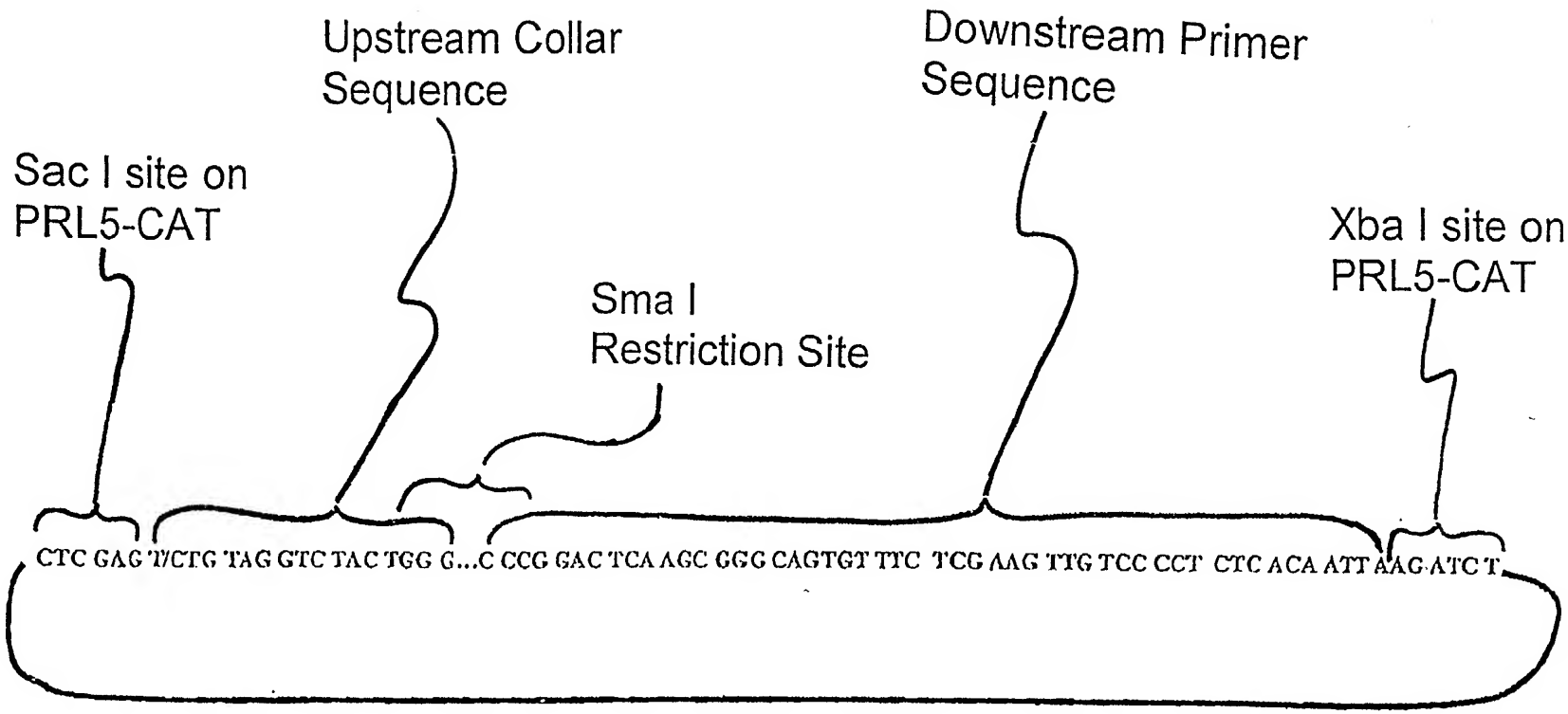
Upstream Collar Sequence
Downstream Primer Sequence
Sac I site on PRL5-CAT
Sma I Restriction Site
Xba I site on PRL5-CAT
CTC GAG T/CTG TAG GTC TAC TGG G...C CCG GAC TCA AGC GGG CAGTGT TTC TCG AAG TTG TCC CCT CTC ACA ATT AAG ATC T

FIG. 6A

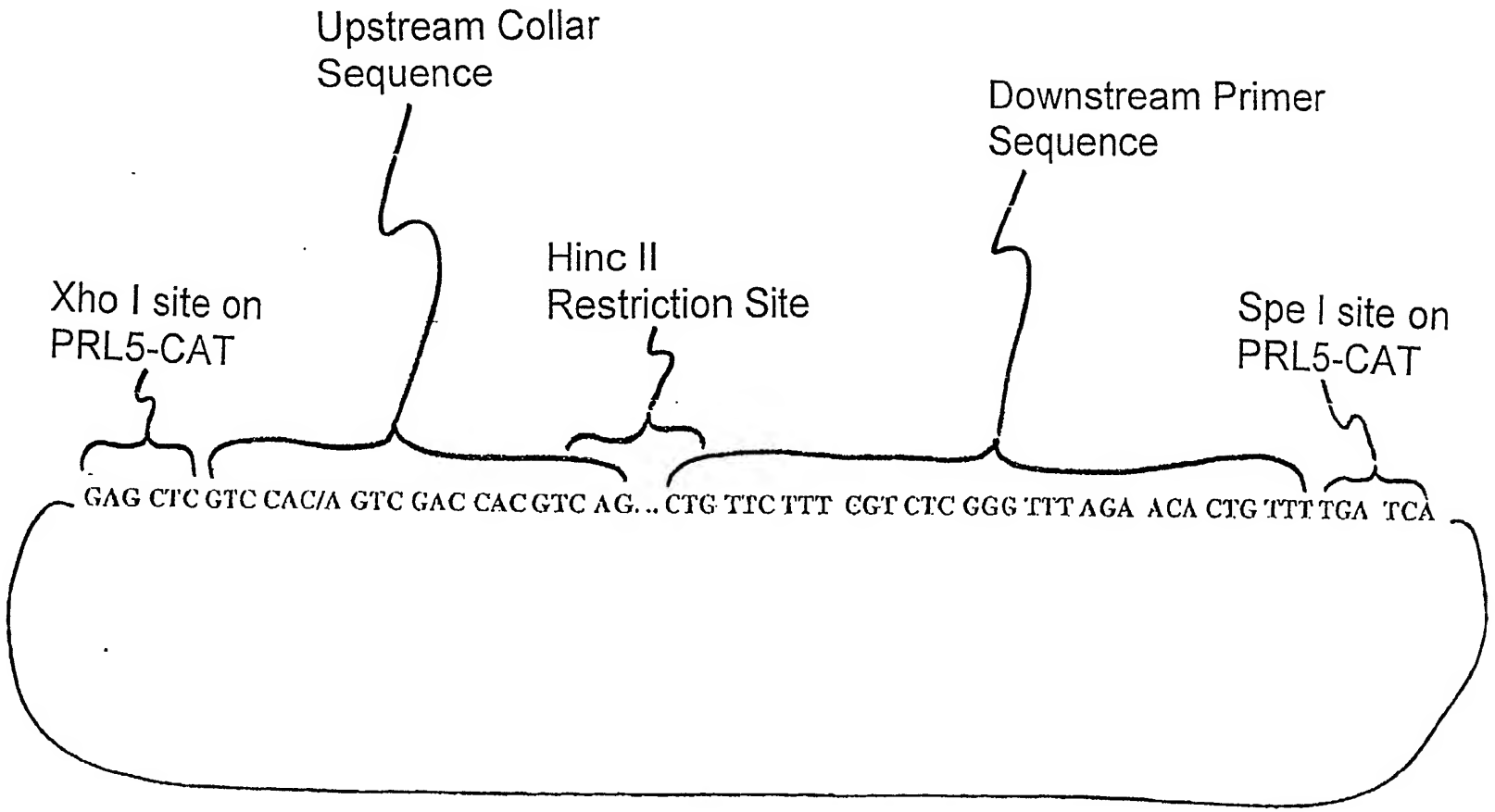
Upstream Collar Sequence
Downstream Primer Sequence
Hinc II Restriction Site
Xho I site on PRL5-CAT
Spe I site on PRL5-CAT
GAG CTC GTC CAC/A GTC GAC CAC GTC AG...CTG TTC TTT CGT CTC GGG TTT AGA ACA CTG TTT TGA TCA

FIG. 6B

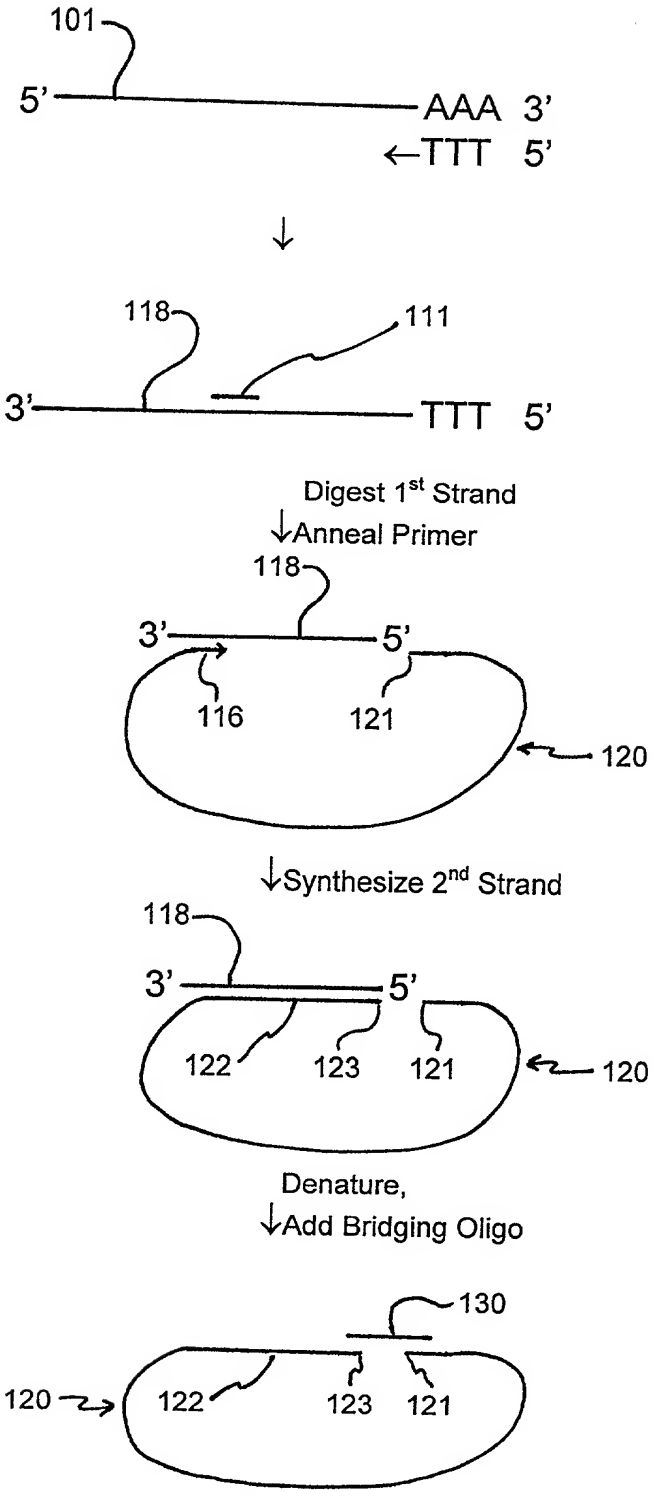
101
5'
AAA 3'
←TTT 5'
118
111
3'
TTT 5'
Digest 1st Strand
↓Anneal Primer
118
3'
5'
116
121
120
↓Synthesize 2nd Strand
118
3'
5'
122
123
121
120
Denature,
↓Add Bridging Oligo
130
120
122
123
121

Fig. 7